UNIV.OF
TORONTO
LIBRARY

Med
M

THE

MEDICAL NEWS.

A Weekly Medical Journal.

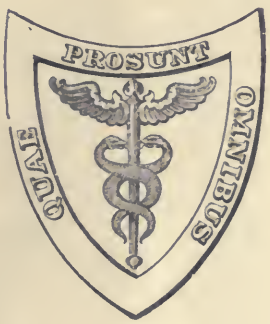
UNIVERSITY OF TORONTO LIBRARY

EDITED BY

HOBART AMORY HARE, M.D.

VOLUME LV.

JULY–DECEMBER, 1889.



353574a
10.8.38

PHILADELPHIA:
LEA BROTHERS & CO.
1889.

R
11
M43
v.55

Entered according to the Act of Congress in the year 1889 by

LEA BROTHERS & CO.,

In the Office of the Librarian of Congress at Washington. All rights reserved.

PHILADELPHIA
DORNAN, PRINTER,
N. W. cor. Seventh and Arch Sts.

CONTRIBUTORS

TO

VOLUME FIFTY-FIVE.

Lewis H. Adler, M.D., of Philadelphia.
Dudley P. Allen, M.D., of Cleveland, Ohio.
Henry C. Allen, M.D., of Los Angelos, Cal.
John Ashhurst, Jr., M.D., of Philadelphia.
John Aulde, M.D., of Philadelphia.
J. M. Baldy, M.D., of Philadelphia.
Roberts Bartholow, M.D., LL.D., of Philadelphia.
A. N. Bell, M.D., of Brooklyn, N. Y.
Henry G. Beyer, M.D., Ph.D., M.R.S.C., of Washington, D. C.
Frank Billings, M.D., of Chicago.
John S. Billings, M.D., of Washington, D. C.
John J. Black, M.D., of New Castle, Delaware.
Henry R. Bowditch, M.D., of Boston.
Vincent Y. Bowditch, M.D., of Boston.
A. V. L. Brokaw, M.D., of St. Louis.
Daniel R. Brower, M.D., of Chicago.
Charles H. Burnett, M.D., of Philadelphia.
Swan M. Burnett, M.D., of Washington.
James R. Chadwick, M.D., of Boston.
S. H. Chapman, M.D., of New Haven.
N. E. Charlton, of Trinidad, Colorado.
Walter Chrystie, M.D., of Philadelphia.
Solomon Solis-Cohen, M.D., of Philadelphia.
A. Coolidge, Jr., M.D., of Boston.
James M. Craighill, M.D., of Baltimore, Md.
Andrew F. Currier, M.D., of New York.
Roland G. Curtin, M.D., of Philadelphia.
J. M. DaCosta, M.D., of Philadelphia.
J. Chalmers DaCosta, M.D., of Philadelphia.
J. Herbert Darey, M.A., M.D., of Granger, Minn.
Edward P. Davis, M.D., of Philadelphia.
John B. Deaver, M.D., of Philadelphia.
Charles Denison, M.D., of Denver, Colorado.
F. X. Dercum, M.D., of Philadelphia.
George E. de Schweinitz, M.D., of Philadelphia.
Robert T. Edes, M.D., of Washinton, D. C.
Charles Seth Evans, B. S., M.D., of Cincinnati.
Edward Evans, M.D., of La Crosse, Wis.
A. M. Fielde, M.D., of Swatow, China.
F. Forchheimer, M.D., of Cincinnati.
M. H. Fussell, M.D., of Philadelphia.
G. M. Garland, M.D., of Boston.
Albert L. Gihon, M.D., of Washington, D. C.
S. P. Glover, A. M., M.D., of Beyrout, Syria.
William Goodell, M.D , of Philadelphia.
Walter D. Green, M. D., of Philadelphia.
H. A. Hare, M.D., of Philadelphia.
Frederick P. Henry, M.D., of Philadelphia.
J. F. Heustis, A.M., M.D., of Alabama.
G. C. Huber, M.D., of Ann Arbor.
E. Fletcher Ingals, A.M., M.D., of Chicago.
Edward Jackson, M.D., of Philadelphia.
W. W. Jaggard, M.D., of Chicago.
John A. Jeffries, M.D., of Boston.
C. W. Kavanaugh, M.D., of Gainesville, Texas.
Clarence King, M.D., of Machias, N. Y.
E. H. King, of West Liberty, Iowa.
Frederick I. Knight, M.D., of Boston.
Paul H. Kretzschmar, M.D., of Brooklyn, N. Y.
Ernest Laplace, A. M., M.D., of Philadelphia.
George M. Lefferts, A. M., M.D., of New York.
Morris J. Lewis, M.D., of Philadelphia.
James Hendrie Lloyd M.D., of Philadelphia.
Alfred Loomis, M.D., LL.D., of New York.
Henry M. Lyman, M.D., of Chicago.
Richard Lea MacDonnell, B. A., M.D., of Montreal, Canada.
E. M. Magruder, M.D., of Virginia.
Thomas H. Manley, M.D., of New York.
Matthew D. Mann, M.D., of Buffalo, N. Y.
Edward Martin, M.D., of Philadelphia.
John Martin, Ph.M., M.D., of Ann Arbor, Mich.
Arthur V. Meigs, M.D., of Philadelphia.
W. M. Memminger, M.D., of Charleston, S.C.
O. H. Merrill, M.D., of Corinna, Maine.
S. Weir Mitchell, M.D., of Philadelphia.
Robert B. Morrison, M.D., of Baltimore, Md.
Thomas S. K. Morton, M.D., of Philadelphia.
John C. Munro, M.D., of Boston,
J. H. Musser, M.D., of Philadelphia.
Thomas R. Neilson, M.D., of Philadelphia
William Osler, M.D., of Baltimore, Md.
Edward O. Otis, A. B., M.D , of Boston.

Roswell Park, M.D., of Buffalo.
Charles T. Parkes, M.D., of Chicago.
Theophilus Parvin, M.D., of Philadelphia.
George L. Peabody, M.D., of New York.
Charles B. Penrose, M.D., of Philadelphia.
William Pepper, M.D., of Philadelphia.
E. B. Platt, M.D., of Baltimore, Md.
J. J. Putnam, M.D., of Boston.
B. K. Rachford, M.D., of Cincinnati, Ohio.
B. Alex. Randall, A.M., M.D., of Philadelphia.
W. O. Roberts, M.D., of Louisville.
Beverley Robinson, M.D., of New York.
L. V. Roning, M.D., of Rogers Park, Ill.
H L. Russell, M.D., of Poynette, Wisconsin.
Ralph W. Seiss, M.D., of Philadelphia.
Nicholas Senn, M.D., Ph.D., of Milwaukee, Wis.
Allen J. Smith, M.D., of Philadelphia.
Theobald Smith, M.D., of Washington, D. C.
M. Stamm, M.D., of Fremont, Ohio.
M. Allen Starr, M.D., of New York.
David D. Stewart, M.D., of Philadelphia.
Lewis A. Stimson, M.D., of New York.
E. Stuver, M.S., M.D., of Rawlings, Wyoming Territory.
Lawson Tait, F.R.C.S., of Birmingham, Eng.
R. W. Taylor, M.D., of New York.
T. Gaillard Thomas, M.D., of New York.
W. W. Tompkins, M.D., of Charleston, West Virginia.
C. W. Townsend, M.D., of Boston.
E. L. Trudeau, M.D., of Saranac Lake, N. Y.
S. S. Turner, M.D., Surgeon U. S. Army.
James Tyson, M.D., of Philadelphia.
James B. Walker, M.D., of Philadelphia.
J. Howell Way, M.D., of Waynesville, N. C.
Robert F. Weir, M.D., of New York.
William H. Welch, M.D., of Baltimore.
J. William White, M.D., of Philadelphia.
W. R. Whitehead, M.D., of Denver, Colorado.
Richard Wilson, Student of Medicine, University of Pennsylvania.
C. B. Williams, M.D., of Philadelphia.
P. C. Williams, M.D., of Baltimore, Md.
James C. Wilson, M.D., of Philadelphia.
Randolph Winslow, A.M., M.D., of Baltimore.
L. Wolff, M.D., of Philadelphia.
Jonathan Wright, M.D., of Brooklyn, N. Y.
James K. Young, M.D., of Philadelphia.

SOCIETIES AND HOSPITALS.

Association of American Physicians.
American Gynecological Society.
American Medical Association.
American Neurological Association.
American Ophthalmological Society.
American Otological Society.
American Rhinological Association.
Cincinnati Academy of Medicine.
Congress of German Dermatological Society.
Congress of the German Society of Gynecology.
Congress of the German Society of Surgery.
Gynecological Society of Chicago.
New York Academy of Medicine.
New York County Medical Association.
New York Neurological Society.
Obstetrical Society of Philadelphia.
Philadelphia Academy of Surgery.
Philadelphia County Medical Society.
Tri-State Medical Association of Tennessee, Georgia, and Alabama.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, JULY 6, 1889. NO. 1.

ORIGINAL LECTURES.

THE TREATMENT OF GASTRO-INTESTINAL CATARRH IN INFANTS, WITH ESPECIAL REFERENCE TO IRRIGATION OF THE INTESTINES.

A Clinical Lecture delivered at the Woman's Medical College of Philadelphia.

BY EDWARD P. DAVIS, M.D.,
OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL, ETC

FROM the many terms employed to designate a disease characterized in infants by inflammation of the digestive tract, with diarrhœa, fever, and exhaustion often resulting fatally, the name gastro-intestinal catarrh has been chosen as best describing the pathology of the affection and embracing all grades of its severity. Cholera infantum may fairly designate cases not frequent in which the severity of the affection and rapidly fatal result closely simulate Asiatic cholera.

We shall obtain a better understanding of the pathology of this disease if we first consider some points regarding normal digestion in infants. It has been shown by Koch that lactic acid is wanting in the gastro-intestinal tract of patients dying with Asiatic cholera, and it might reasonably be inferred that lactic fermentation is part of the processes of normal digestion. Recent studies by Baginsky and Leo have confirmed this inference so far as the digestion of infants is concerned. The stomach of the newborn child does not contain pepsin as an active ferment, but digests by the action of lab ferment and zymogen, and when cow's milk is taken hydrochloric acid is secreted in excess. The lactic fermentation or hydro-lactic acid digestion is present normally, and it is not this process, but a further acid fermentation resulting in the change of the neutral lactates to butyric acid, with the formation of acetic acid and acetone, which is pathological; the digestion of starch, casein, and albumin is checked simultaneously with the formation of the acetic compounds.

The bacteria, whose presence accompanies the lactic fermentation, are adjuvants in normal digestion, and their activity is not to be checked; it is the excessive formation of bacteria arising through failure of the inhibitory function of the lactic bacteria which is to be combated. Examination of the adult stomach reveals the presence of bacteria in abundance, whose function in normal digestion is to aid in splitting up ingested foods. There are, then, bacteria and bacteria, some benign and adjuvant, others malignant and destructive, according to the part they bear in aiding or hindering digestion.

Regarding the causation of gastro-intestinal catarrh, its active cause is most often irritating food; its predisposing causes are those which favor vaso-motor paralysis and blood-stasis in the digestive organs, as exposure to cold and the depressing effect of heat on the vaso-motor centres. And the severity of a given attack of this disease will depend upon the presence and potency of the active cause in addition to the predisposing causes. An infant exposed to a sudden cool change in summer may suffer from congestion of the digestive organs, with transudation of serum and hypersecretion of the mucous membrane of the digestive tract; if the child's food be lessened and be free from fermentation and irritating matter, nature soon cures the case with a few loose stools which relieve congestion and cause the gastro-intestinal catarrh to cease. If, however, upon this condition of blood-stasis and hypersecretion the acetic bacteria and irritating products of their activity be grafted, a general gastro-intestinal catarrh results attended by the rapid growth of bacteria and structural lesions of a grave nature.

Distinguishing, therefore, between the predisposing and active causes of the disease in question, we find that the most important factor in producing active causes is heat. When the average temperature for twenty-four hours is so high as to favor the decomposition of the albuminoid envelope of the fat drop which forms the milk globule, milk ceases to be an unirritating food and becomes an active irritant and conveyer of pathogenic bacteria. Milk is ordinarily taken from the cow early in the morning, and delivered to the consumer before 9 or 10 A.M. When the night temperature rises disease caused by irritating milk increases; in early autumn it is less frequent so soon as the nights become cool although the days are warm. Not only is milk affected by heat, but the water of ponds, lakes, and rivers contains an increased quantity of fermented material and bacteria so soon as the night temperature permits the continuous decomposition of vegetable and animal albuminoids contained in leaves and twigs, and in the bodies of birds and fish. Milk and water under certain average temperatures are very liable to become active causes of gastro-intestinal catarrh.

The pathology of these cases varies from that of simple blood-stasis and transient hypersecretion to the development of well-marked ulceration of the large intestine with profound anæmia of vital organs and passive congestion in the cerebral sinuses. In cases which seem to survive the disease only to perish later in collapse, no gross lesion is found sufficient to explain the fatal issue, and marasmus expresses our ignorance of the pathology of these cases. It is not improbable that atrophy of the gastric tubules resembling that found in adults in pernicious anæmia is present in such cases. Examination of the stools in cases attended by intestinal lesions reveals undigested food, pus, and bacteria in abundance; when chemically examined fat is present in increased quantities, showing failure of pancreatic digestion.

The symptoms of a compensatory catarrh following simple congestion are moderate fever, restlessness, thirst, and frequent liquid-yellow stools often containing mucus. In severe cases fever becomes high, restlessness is well

marked; thirst excessive; profound anæmia soon discloses itself; stupor, coma, or convulsions, a clammy skin, and relaxed sphincters precede death. Stools are very frequent, watery, serous or very dark in color; green, or chocolate, or coffee-ground in appearance, and sometimes extremely fetid. In considering the color of a stool, its color immediately on passage should be noted, as the bile compounds assume darker hues on oxidation in the diaper, which may mislead. In rapidly fatal cases, styled cholera infantum, the picture of Asiatic cholera in the adult is reproduced in miniature. Extreme prostration, "rice water" stools in rapid succession, cadaveric appearance, clammy skin, and death in coma decide the fate of the child in a few hours; there is little time to study the stages of disease, and therapeutic expedients are tried in vain.

In discussing the treatment of gastro-intestinal catarrh in infants, prophylaxis is of major importance. The fact that congestion of the abdominal viscera, with simple hypersecretion of the digestive mucous membrane, furnishes the most favorable condition for the development of serious disease, should not be overlooked. The child's skin should be kept in a condition of healthy activity, fitting it to withstand changes of temperature, by regular baths in tepid water; thin flannel should be worn next the skin, covering the child's body and limbs to the wrists and ankles. The expedient of European residents in India may be adopted, and an abdominal band of flannel worn beneath the shirt. It will be found much more healthful and comfortable to discard outer wraps in hot weather, and clothe the child entirely in flannel, using as few garments as possible. So clad, an infant may pass the greater portion of its day in the open air with little danger of taking cold. The hygiene of the child's dwelling is also of great importance. Air space, freedom from decaying vegetable and animal matter, and immunity from conditions preventing sleep, are essential.

But especial attention should be paid to the infant's ingesta. Infective material should be excluded or neutralized in food and drink. Water should be filtered and boiled before given as a beverage or with milk. Milk should be sterilized, by apparatus designed for that purpose, or by boiling. All albuminoid food liable to decomposition should be thoroughly heated; the many "teas" mixed for infants by meddlesome women are abominations. The nursing-bottle should be frequently scalded, washed in water containing soda, and the rubber nipples should be kept in a saturated solution of borax. When apparatus for sterilizing milk is not available, it may be boiled in a glass fruit jar, which is placed in a pan of water upon the fire; the impervious lid may then be applied, and the milk set away to cool until needed.

It is far better, however, to sterilize milk in the bottle from which the infant feeds. Numerous sterilizers are in the market, the essential principle of all being the same. They consist of a tin or wire rack holding bottles containing milk, which rests upon a shoulder or ledge several inches above the bottom of a closed tin box. The bottles having first been sterilized by boiling water or dry heat, are partially filled with milk, or milk and boiled water. They are then corked by a rubber cork perforated for a glass stopper. The glass stopper is withdrawn, the bottles placed in the closed tin box, which contains three or four inches of water, and the whole is heated until the water boils for half an hour. The process should be watched as the water heats to boiling, and when that point is reached the glass stoppers are replaced in the rubber corks, and the bottles thus sealed. The bottles are set aside to cool.

When needed for feeding, a teaspoonful of a good extract of malt is added to 4 to 6 ℥ of milk and the bottle is heated in water to a proper temperature, a freshly cleaned rubber nipple is substituted for the rubber cork, and the infant receives its meal from the vessel in which it was sterilized without exposure of the milk to the air. This process may be simplified by substituting for the rubber cork a plug of cotton sterilized by heat. Cotton plugs are in common use as air filters to prevent the access of bacteria in culture experiments, and their use seems indicated to close vessels in sterilizing milk. Extract of malt is preferred to sugar because less likely to ferment.

In hospitals and homes, where a number of children are collected, all diapers should be disinfected by immersion in a solution of bichloride of mercury, 1 to 5000 or 10,000. With every precaution stools are retained in the diaper for varying periods, and it is well to prevent the sporulation of bacteria during this time. For the child's person, strict cleanliness is necessary; finely powdered boracic acid may be used to advantage as a toilet powder when a tendency to excoriation exists.

The active treatment of a simple congestion of the digestive mucous membrane, with compensatory catarrh, should be the withdrawal of food for several hours, a warm bath, and a free supply of boiled water in small quantities as a beverage; should prostration threaten, whiskey and water, or aromatic spirits of ammonia and water, may be given. It is especially true of infants that loss of fluid is felt severely, and a few liquid stools in a young child cause distinct depression. If nature does not move the bowels promptly, castor oil may be given.

Should vomiting of curded milk occur, with pronounced gastric irritation, the stomach may be washed out to advantage. A small soft catheter (No. 8), a short piece of glass tubing, and a longer rubber tube and small funnel are sufficient, the glass tubing connecting the catheter and rubber tubing and serving as an index of the passage of fluid. Boiled water containing a little sodium bicarbonate or sodium salicylate (gr. 1 to ℥ 1) may be employed. The tongue is gently but firmly depressed with the index finger of the left hand, and with the right the oiled catheter is passed backward and downward; meeting resistance a pause is made, the catheter rotated gently, and usually enters the œsophagus without difficulty. The fluid should be poured into the funnel very gently, and allowed to return by siphonage, until it returns clear.

Although gastric ulcer and rupture of the stomach are uncommon in infants, yet in a recent series of experiments made by my friend Dr. Bennett, physician in charge of the Sea Side Home, Atlantic City, to determine the probability of rupturing the gastro-intestinal tract by irrigation, he found on the cadaver that the few cases of rupture occurring on post-mortem irrigation were in the stomach, where beginning ulceration existed. Gastric irrigation should be made with great gentleness and patience, and should be undertaken only when gastric irritation is pronounced. The omission of one or two meals may be followed, if symptoms disappear, by a re-

sumption of sterilized milk and water in diminished quantities; skimmed mutton broth or white of egg water may be employed if milk is not tolerated at once.

Should the case go on to well-marked intestinal catarrh with enteritis a more decided policy must be adopted. An effort should at once be made to remove irritating ingesta from the intestines, to prevent the growth of bacteria, and to feed and support the patient in every possible way. An intestinal antiseptic is indicated, and from experience calomel seems best fitted for an early stage of the disease. In $\frac{1}{10}$ or $\frac{1}{20}$ grain doses, with soda or milk sugar, it may be given every hour or half hour until the stools show a free secretion of bile. For the first six or eight hours food should be replaced by teaspoonfuls of whiskey and boiled water or Jacobi's mixture of white of egg and whiskey and water, care being taken that fluid in *small* quantities is taken very freely. Temperature may be reduced by the warm or hot bath, a cold cloth upon the head. A spice plaster upon the abdomen may often be used to advantage. If pain and restlessness, with fever, are not controlled by the bath antipyrin in one-half grain doses may replace opium to advantage.

If the antiseptic action of Nature's intestinal antiseptic the bile and calomel are not sufficient to check the growth and invasion of bacteria, intestinal irrigation should be promptly undertaken, *before* prostration supervenes. A soft catheter (No. 11), a connecting glass tube, and fountain syringe are needed. The fluid may be boiled water made alkaline by sodium bicarbonate; thymol 1 to 1000, or sodium salicylate gr. 20 to ℥ 20 of water (the last is highly prized by Dr. Bennett). Through the courtesy of Dr. Waterman, of the clinical staff of the College, I have a case in which intestinal irrigation is indicated. The child is laid across the lap of the nurse who receives it on its abdomen upon a rubber sheet gathered into a pail below. Placing the back of the left hand against the child's nates the oiled catheter is introduced by the right hand and pushed gently into the bowel. As it advances it is held by the thumb and finger of the left hand while the right rotates it; if a decided obstruction presents, it is slightly withdrawn and then advanced.

The catheter may be introduced six or eight inches without difficulty; the fountain syringe should be held from two to three feet above the patient and fluid allowed to flow freely. The temperature of this fluid should be from 90° to 110° F.; if the child is in collapse, a hot irrigation is a decided stimulant. The quantity of fluid may vary from ℥ 20 to a quart and a half; in collapse, after the fluid returns clear several ounces of hot water or hot whiskey and water may be introduced into the bowel for absorption to decided advantage. As you see in the patient before you, while the introduction of the catheter may be resented the passage of fluid is a positive comfort, and it is not an unusual occurrence for infants to fall asleep on the nurse's lap while receiving intestinal irrigation and sleep for an hour or two, the temperature falling considerable. The pressure of the child's body as it lies prone upon the nurse's lap secures a free return flow of fluid, and there is little danger of doing violence to the intestines, for the abdominal wall is undergoing distention and not the intestine, as shown in Dr. Bennett's experiments. Intestinal irrigation may be employed twice daily without injury to the patient, and even more often in urgent cases.

Should the case become chronic, naphthaline or salol may be given to advantage; salol, with mercury and chalk, has served me well. But the maintenance of the patient's strength, the removal of irritating ingesta, the preservation of the conditions most favorable for the circulation of blood, avoidance of passive congestion, and finally the gradual reëstablishment of digestion, these form a problem requiring the most painstaking attention to each case. The fortunes of these little patients are decided often in a few hours, and having tided them over an acute attack a restoration to health may now follow speedily.

If not, the problem of nutrition is first to be solved. Mutton, veal, and chicken broth; flour ball; barley water; junket; a good extract of malt; English breakfast tea and rum (a favorite stimulant for children with Continental physicians), warm milk from the cow have all benefited individual cases. Change of air may turn the tide when nothing else will. Arsenic, in small, but steadily increasing doses, with olive oil, almond flour, or butter may be tried. Oil inunctions are also useful. The peptonizing and pancreatizing powders sold by druggists are often useful in pre-digesting milk.

But it is my experience and conviction that your success in treating gastro-intestinal catarrh in infants will depend more upon your clear understanding of the causes of the disease and the way to avoid them; your knowledge of its pathology, and your close study of each case and intelligent use of the simplest and most direct methods of antiseptic and supporting treatment than in the drugs you employ or the particular brand of artificial food used. You may not increase the profits of the manufacturers and dealers of patented foods, but it will be to the profit of your patients.

ORIGINAL ARTICLES.

VULVO-VAGINITIS IN CHILDREN.

By ANDREW F. CURRIER, M.D.,
of New York.

If we recall for a moment a few points concerning the anatomy of the external female genitals in childhood, we will observe that they are unprotected by hair, the nymphæ are relatively more prominent and protuberant than they are after puberty, both the large and the minute glands are less active functionally than in mature life, and the entrance to the vagina is less conspicuous and is more or less obscured by the hymen. As Leishman remarks, the conformation suggests the greater importance of the urinary, compared with the genital organs, during the developmental period of the structures of the body. But it also means that the external genitals, with increased susceptibility to infection during childhood, are more exposed, should opportunity for infection arise. In other words, an opportunity which in a child would result in vulvo-vaginitis might not so result in an adult.

The infectious element may be communicated

either to the vulva or the vagina and the resulting inflammation extend in either direction, but for reasons which are obvious the vulva is more likely to be first involved. Either vulvitis or vaginitis may exist alone, but more frequently the infectious disease which begins with the vulva does not end there. In adults this disease not infrequently extends to the uterus, the Fallopian tubes, the ovaries, and the peritoneum, and may end fatally. I can find but one recorded case in which such extension occurred in children, but it seems to me extremely probable that many of the deformed and undeveloped uteri with which are associated so much dysmenorrhœa and anguish, sterility and domestic unhappiness are the legitimate consequence of vulvo-vaginitis in early life.

If this is so, an increased responsibility is laid upon mothers and family physicians that the disease be not ignored from feelings of false modesty or any other consideration. Modesty is, indeed, one of the most beautiful attributes which human beings possess, but it is a false and utterly unworthy sentiment when it interferes with the present or prospective well-being of the one for whom it is exercised. Confidence in the ability and integrity of a physician is one of the first requisites in the relations which subsist between physician and patients; in fact, how can one do his full duty if this confidence is withheld? Not until this is more fully realized and practised can we hope for that powerful interference in the beginnings of disease which will enable us to anticipate more serious resulting disorders, and not until then can our children be properly equipped physically for the responsibilities of maternity with all that is therewith implied for the family and the State.

Vulvo-vaginitis is not in all cases the result of infection; it may be associated with and be the expression of various constitutional vices, it may be caused by traumatism of various kinds and degrees, or it may be due to the influences of parasites other than the parasitic microörganisms of infectious disease. When we consider the susceptibility of infants and children to infection, and the fact that so many of the diseases which are common among them are now believed to be the result of an infectious agent, we are prepared to admit that by far the larger number of cases of vulvo-vaginitis are of infectious origin. The disease may be congenital—an infant may be as readily infected with this disease by its mother during parturition, as with ophthalmo-blenorrhœa, and there are few, if any, who will now question the possibility of the latter. That it is less common than ophthalmo-blenorrhœa is probably due to the fact that breech presentations are far less common than vertex presentations, though I am prepared to believe that vulvo-vaginitis may be contracted even in cases in which the head presents. The congenital form of the disease may also be associated with such exanthemata as measles and scarlet fever which not infrequently develop during fœtal life.

The infectious character of the disease is well demonstrated in various epidemics which have been observed in recent years. Von Dusch reports such an epidemic which he observed in the Heidelberg hospital for children in 1886, and again in 1888, the disease being contracted in nearly half the cases after the children had entered the hospital (*Deutsche med. Wochen.*, 1888, p. 831). Other similar epidemics have been reported by Suchard (*Rev. mens. des Mal. de l' Enf.*, 1888, p. 265); Sarazin (*Rev. mens. des Mal. de l' Enf.*, May, 1884); Tischendorf (quoted by De Amicis, *Lyon Méd.*, October 26, 1884); Cséri (*Pester Med. Chirur. Presse*, 1885, No. 1); Fränkel (*Virchow's Archiv*, xcix. p. 251), Bouchut, and Atkinson (quoted by von Dusch, *loc. cit.*).

The traumatic form of the disease may be due to self-inflicted injury, as in masturbation, the introduction of stones, sticks, or shells into the vagina, to falls and blows, and, in some cases, to more or less successful attempts at rape. There is no crime which excites public sympathy and indignation more than rape, and there are few which have a severer penalty; it is, therefore, imperative that the physician who is called upon for an opinion should approach such cases in the calmest judicial spirit, that he may not be the instrument of injustice to accuser or accused.

The etiology of the parasitic form, at least as it is ordinarily given in the text-books on pediatrics, furnishes the opportunity for scepticism. As high an authority as Baginsky speaks of the migration of *oxymi* from the rectum into the vagina, where they deposit their *ova*, which, when developed, give rise to vulvo-vaginitis. Other authorities mention similar migrations on the part of other varieties of intestinal worms with like results. This may be possible, but I agree with Reeves Jackson in expressing scepticism concerning it. It would seem as if the irritation from worms in the rectum, with the resulting mucous discharges dripping upon the anus and external genitals, the rubbing and irritation of dirty fingers would suffice for the production of the disease.

Baginsky's classification of this disease, which is practically that of Vogel's, is a good and comprehensive one, and includes (1) the catarrhal and gonorrhœal variety, (2) the phlegmonous, (3) the diphtheritic, (4) the gangrenous. I have preferred to modify this into (1) the simple catarrhal, (2) the gonorrhœal, (3) the phlegmonous, (4) the diphtheritic. The catarrhal may be entirely distinct from the gonorrhœal, and the gangrenous is only a stage of the phlegmonous, with perhaps some exceptions.

Simple catarrhal vulvo-vaginitis is the most common variety of the disease. No one who practises obstetrics or pediatrics to any extent fails to see it. A. Jacobi speaks of seeing it in hundreds of cases (*Arch. of Ped.*, 1886, p. 336). It may occur in newborn infants or at any period of childhood. It may be due to various causes, and is far more common among the poor and in hospitals than among those who are well-to-do and are particular about the habits and physical condition of their children. The modern gospel of cleanliness is teaching us the fallacy of the old theory that nature cannot be improved upon, if we consider those nearest nature who herd together like the animals and are equally oblivious with them as to their personal appearance and their home surroundings. It is always the poor, the ignorant, and the dirty who suffer most from "the pestilence that walketh in darkness and the destruction that wasteth at noonday." And so we would look for vulvo-vaginitis and find it in the crowded tenement-house—not so often among those who are well-informed and prosperous. Reference has already been made to its presence in hospitals, and I wish strictly to exclude, in this connection, the gonorrhœal variety, of which several hospital epidemics have been reported. If gonococci are found with the discharges, the disease must be gonorrhœal, though the original source of infection may not be traceable, or else the microörganisms are morphologically identical with gonococci, but of different characteristics. The latter is Fränkel's theory in answer to the objection that in a large number of cases of what was apparently simple catarrhal vulvo-vaginitis gonococci have been found (*Virchow's Arch*, xcix., 1885, p. 251). If it is decided that morphological characteristics are of no value, or of little value, in threading the mazes of bacteriology, it must intensify the difficulties of a study that is already extremely intricate.

The most evident symptom in this variety of the disease is a white or colorless discharge, which is secreted in part by the muciparous glands of the vulva and vagina, and is in part a transudation from the bloodvessels. Intense irritation follows the drying of this discharge upon the skin surrounding the external genitals. The scratching and rubbing of these parts by dirty and germ-laden fingers may cause the development of phlegmonous vulvo-vaginitis. Swelling, or urethral irritation, or glandular disturbance in the inguinal region are not accompaniments of the simple catarrhal variety of the disease.

The cause may be any irritant injury, such as was alluded to in a previous paragraph, a constitutional disease, such as syphilis, rhachitis, or scrofula, want of cleanliness, with accumulation of secretions, etc. It has been observed repeatedly in conjunction with measles and scarlet fever. It is probably a portion of the eruptive process of these diseases, and kindred to the condition which affects the mucous membrane of the eyes, nose, and mouth. Von Dusch (*loc. cit.*) thinks that scarlet fever predisposes to vulvo-vaginitis, and a similar opinion has been expressed by others.

The duration of the disease depends largely upon the conditions with which it is associated. If it accompanies a constitutional disease like rachitis or scrofula it may continue indefinitely or until the general condition is decidedly ameliorated. If it accompanies an acute disease it may not last more than a week or two after treatment has been begun, and treatment is, as a rule, inadmissible until the acute disease has subsided. There are certain cases, especially in dispensary practice, in which the cause cannot be satisfactorily traced, which continue a long time chiefly because they are brought to the physician only at long intervals, and in the meantime his directions are most inefficiently carried out. Such cases furnish no criterion as to the susceptibility of the disease to rapid and complete cure.

Gonorrhœal vulvo-vaginitis is preëminently an infectious disease, and its cause has been so frequently traced to the cause which produces gonorrhœa in the adult—namely, the gonococcus of Neisser—that it is safe to say that this point in its pathology is settled. Even if the microbes are not found, and it is not always an easy matter to find them, the presence of the clinical phenomena of the disease, and especially a history of contact, direct or indirect, with one who has been infected, is sufficient for a diagnosis. Thus we find in the records of hospital cases reported by Fränkel, de Amicis, von Dusch, and Suchard that the disease was transmitted from a few or even a single case which was brought into the hospital for treatment, and that in a short time large numbers of children were suffering with the disease. Upon investigation no adults with this disease were discoverable in the surrouundings of these children. It was found, however, in several of the reports that the children in each hospital were bathed in the same tub, upon the same day; that there was a common stock of soap and towels; and that the attendants were not of superior intelligence, nor particularly discriminating in separating those who were infected when brought to the hospital from the uninfected. With our present knowledge of the insidiousness of such diseases no further investigation in such cases would seem to be necessary. Dirty water-closets, beds and bedding, and other articles of hospital or bedroom furniture are other means by which this disease may be transmitted with great facility. Walker reports (*Arch. of Ped.*, 1886, p. 269) twenty-one cases in which there was a history of contact with parents who had

the disease or with other infected persons who had committed assault and rape.

Allusion has already been made to congenital cases, especially in breech presentations, in which infection was accomplished during parturition. As in simple catarrhal vulvo-vaginitis, the secretion upon the external genitals is usually the chief symptom, but in the gonorrhœal variety it is purulent, the same as in adults, except in very mild cases, and in its later stages. Fränkel, having found only small quantities of epithelium in the secretions which he examined, concluded that the disease does not give rise to the same pains and erosions as in the adult, but this cannot be considered an universal rule, for others, including myself, have found it accompanied with great pain; and as to the erosions, it is often impracticable and almost impossible to examine with sufficient thoroughness to decide as to that, unless the child is anæsthetized at each examination.

I have found the clinical phenomena in acute cases closely resembling those which I have described in former papers concerning this disease in adults. (See *New York Med. Journ.*, Jan. 10 and 24, 1885, and Oct. 17 and 24, 1885.) The external genitals are swollen, the mucous membrane has an appearance resembling wet hemlock sole leather, there is exquisite sensitiveness to the touch, and there is sometimes severe pain in urination. Suchard reports cases in which the inguinal glands were enlarged and painful. Hatfield (*Arch. of Ped.*, 1886, p. 64) has seen similar cases, and reports one in which peritonitis resulted. The disease may therefore follow the same course as in the adult.

In common with other observers, I have found that it may be very intractable and rebellious to treatment, even continuing for months. The medico-legal bearings of many of the cases of this disease give it an importance in such lines which no other disease in childhood has.

Phlegmonous vulvo-vaginitis, as it is usually seen, is due to traumatism. The traumatism may be accomplished in the greatest variety of ways. It may be self-inflicted, or result from accident, or be due to intentional violence at the hands of others. According to Vogel (*Lehrbuch der Kinderkrankheiten*, 1880, p. 431), the gangrenous condition may accompany or follow typhoid fever, diphtheria, measles, smallpox, and scarlet fever. We should expect such a condition to occur, if at all, among children who are poorly nourished and badly cared for, like that analogous condition, *noma*, which sometimes effects the side of the mouth. Fortunately, the condition is a rare one, at least in this vicinity. According to Baginsky, the phlegmonous variety may develop from the catarrhal, but I do not think this would be apt to occur unless a traumatic or infectious element were added.

It is not always easy to differentiate the phlegmonous from the gonorrhœal variety. Indeed the two may coexist, as in cases of rape in which great violence has been used, and in which the criminal suffered with gonorrhœa at the time the assault was made. It is scarcely necessary to dwell upon the course of the disease, which is that of phlegmonous inflammations in general. It is accompanied by great pain, and may result in the formation of pus.

Diphtheritic vulvo-vaginitis—that is, the condition in which a false membrane forms in the vulvo-vaginal region, with more or less destruction of tissue—is by no means limited to diphtheria, although as an essential part of that process it may best be considered in connection with diphtheria. Any morbid condition in which the blood contains an excess of fibrin or fibrinogenous material, may develop diphtheritic vulvo-vaginitis, especially if any abrasion of the skin or mucous membrane exists. It is sometimes seen in connection with typhoid fever and scarlet fever (Baginsky), and Vogel has seen it most frequently during and after epidemics of measles, especially in the damp and crowded dwellings of the poor. It necessarily results in gangrene, to a greater or less extent, and among the illy nourished children of the poor, with bad hygienic surroundings, it means a septic condition which will be likely to have a fatal issue.

As to the question of treatment, whatever be the variety of vulvo-vaginitis, the treatment resolves itself into antisepsis and cleanliness, and perhaps it may some day be demonstrated that these are identical terms. It is not designed to convey the impression that the treatment should be exactly the same in all the varieties of the disease, for any one with even a limited experience knows that the same substances do not produce the same results in all cases. The personal individuality factor enters every therapeutic equation, and this, alas, is often very deceptive and spoils our calculations.

I have seen cases of vulvo-vaginitis in which the patients were apparently in robust health, but this is not the rule, and we must not approach this subject without premising that something is to be given to affect the general condition.

Whether there be coexisting acute disease, or the common constitutional vices, scrofula, rhachitis, or syphilis, the hygienic surroundings are first to be made as favorable as possible, and then the substances which, for want of a better name, are called tonics are to be liberally administered. Whether the choice be iron, mercury, the iodides, or the vegetable bitters, they are too well known and appreciated to require more than a passing notice. I believe there are none of these cases which would not do well by the seashore, and one of the greatest blessings of modern times to children are the *sani-*

taria which have been established at home and abroad for sick children, by the sea. If these could be multiplied manifold, how changed would be the statistics of infantile mortality and morbidity.

For local treatment cleanliness is a *sine qua non*, and yet it is often impossible to impress upon mothers the importance of so cleansing the entire tract involved that recovery can take place. During the stage of acute inflammation, intravaginal injections cannot be given. This would appear to be self-evident in the phlegmonous and diphtheritic varieties, but they are equally contraindicated in the gonorrhœal variety. When the acute symptoms have subsided, a small well-oiled nozzle attached to a fountain syringe is to be introduced within the vagina at least two inches, twice daily, and a gentle current of water at a temperature of 95° to 100° F. allowed to flow in and out for five to ten minutes. Simple boiled water is sufficient for thorough cleansing, but there is no objection to using instead mild solutions of carbolic acid, boric acid, sublimate, salicylic acid, or chloride of sodium. I do not think that these antiseptic solutions add materially to the efficiency of the injections when properly given, and it must be remembered that the epithelium in these cases is exceedingly tender, and that violence will only be likely to increase the inflammation. Most children will resent this treatment, but if a pad of absorbent cotton suitably moistened with a five per cent. solution of cocaine be first applied to the external genitals for five minutes, the injections may be made painlessly.

In the catarrhal and gonorrhœal forms, two drachms of a two per cent. solution of nitrate of silver should be injected into the vagina every other day, excess being carefully wiped away with small pledgets of absorbent cotton. The external genitals should also receive similar applications with a soft brush or pledget of absorbent cotton at the same time. In the intervals a pad of absorbent cotton, which has been moistened with a mixture of bismuth and glycerine (1 : 8), should be placed against the external genitals and secured with a T-bandage. Circumstances will indicate the frequency with which this should be changed.

If the urethra and bladder become involved, mild alkaline or simple emollient diuretics should be given. With children it is not usually well to use local applications, nor are they usually indicated to these organs.

As these means of treatment which have been referred to will usually suffice if carefully employed, it is deemed superfluous to mention other possible systems of treatment. Should pus form in the phlegmonous variety, the usual principles of antiseptic surgery are applicable. Diphtheritic and gangrenous tissues must, of course, be removed as soon and as carefully as possible, and I know of no antiseptic dressing which is less irritating in such cases than the bismuth and glycerine mixture, or even bismuth alone.

159 EAST THIRTY-SEVENTH ST.

OBSERVATIONS ON THE UNITY OF PHTHISIS AND TUBERCULOSIS.[1]

BY G. C. HUBER, M.D.,
ASSISTANT DEMONSTRATOR OF ANATOMY IN THE UNIVERSITY OF MICHIGAN.

DR. AUSTIN FLINT, the author of the article on "Phthisis Pulmonalis," in *Pepper's System of Medicine*, introduces his discussion on the pathology of pulmonary phthisis in the following words:

"There are two distinct varieties of morbid products in cases of phthisis—namely, the miliary granulations and the infiltrated deposit formerly distinguished as crude tubercle."

And then he further states that "histological investigations have failed to establish an essential distinction between the two varieties. The fact that they are so constantly associated shows some close pathological connection."

Dr. Payne, in his work on *General Pathology*, published last year, makes the following statement in speaking of these diseases:

"Tuberculosis of the lungs, or pulmonary phthisis, is by far the most common disease. Here we recognize two forms, distinguished by the manner in which the poison is introduced into and distributed through the organ."

He further states, that "we have two chief forms of tuberculosis, ordinary phthisis and infective tuberculosis; these forms may be combined, the latter being developed out of the former or even *vice versâ*."

Dr. Bristowe, in the latest edition of his work on *The Theory and Practice of Medicine*, holds the same views.

As these may be taken to represent the most modern views on this subject, I undertook, under the direction of Prof. Gibbes, an investigation into the appearances presented by the lungs of those cases which he had in his laboratory. They were twenty-one in all.

The methods pursued in the investigation were the following: Portions were taken from various parts of each lung, sections cut from these, and a large number stained, mounted, and examined. On comparing the appearances found in these cases, together with the clinical histories, they naturally resolved themselves into the following classification: Six were cases of acute miliary tuberculosis; nine were cases of tuberculosis; one a case of caseous phthisis; and five were fibroid phthisis.

The first six cases come under the head of acute

[1] Read before the Michigan State Medical Society, May 9, 1889.

miliary tuberculosis, because the duration of the disease was from two to four weeks and the lungs were studded with miliary tubercles. These six cases did not all present the same appearances under the microscope, although to the naked eye they were identical, and their clinical histories were very similar. In three the tubercle consisted of a reticular fibroid tissue, having one or more giant cells in it and the larger ones having a necrosed centre. In the three others the tubercle contained no structure, but were merely masses of broken-down caseous material. Every section showed the same structure, and in no instance, out of the very large number of sections examined, were these two forms combined. In those lungs where the formation was tubercular, every tubercle presented the reticular formation. In those lungs containing caseous tubercles, each one consisted of a mass of disintegrated amorphous material.

The next nine cases come under the head of tuberculosis, from the fact that the disease had existed for periods varying from eighteen months to three years, and the lesions in the lungs were those of reticular tubercle. The appearances varied very much in the different cases; all the lungs contained cavities varying in size and distribution.

But in those parts of the lungs where the disease had not advanced far enough to form a cavity the structure could be readily made out. It consisted of aggregated reticular tubercles with necrosed centres. The structure of these was identical with the reticular tubercles already described in acute miliary tuberculosis.

One case came under the head of caseous phthisis from the fact that the disease (although the history in this case is not perfect) was known to have existed nine months before death, and all the morbid changes in the lungs were those of caseous degeneration. More than two hundred sections of these lungs were examined and in not one of them is there the slightest trace of any reticular formation. They all show masses of broken-down material, varying in size, and in some parts cavities were formed in these.

The remaining five cases come under the head of fibroid phthisis, on account of the long duration of the disease, the contracted condition of the lungs, and the large amount of fibrous tissue they contained. In four of these cases it was evident that the fibroid change had been set up by the consolidation of croupous pneumonia, which had not undergone resolution. Small tracts of the lungs showed the typical appearances presented by croupous exudation, the fibrinous coagulum in the air cells, the walls of the air vesicles remaining, but all being in a necrosed condition. Some larger tracts had broken down and formed cavities.

The fifth case was that of a woman aged seventy, and there was no history to show what had caused the fibroid change in the lungs, but from the microscopical appearances it was evident that the case was a very chronic one, and the induration had been going on for a long time. From these cases I will leave out the last five; namely, those of fibroid phthisis, as they do not bear directly on the subject of this paper. This will leave sixteen cases, which will come directly under the heads of tuberculosis or caseous phthisis, and which should, according to the authorities I have already quoted, show reticular tubercles or caseous masses indiscriminately mixed.

That this is not the case I have abundant proof in the large number of sections examined, and I can positively state that no section of any of these lungs showed appearances which gave the slightest difficulty in placing it under one or the other of these heads. The two forms never occurred in the same lung. Now the question I wish to put is this: Could I take sixteen cases of lung diseases without the slightest selection and find that they all presented distinct features, either of caseous degeneration or tubercular formation, which features were in no instance intermixed, if the statements made in the before-mentioned text-books were correct?

This seems to be such an important question that I have ventured to bring it before the Society as a matter which ought to receive further investigation.

OBSERVATIONS ON SULPHONAL.

BY C. W. KAVANAUGH, M D.,
OF GAINESVILLE, TEXAS.

SULPHONAL seems destined to occupy a stable and prominent place among the hypnotics. The reports concerning it have so far, for the most part, been favorable, and I have noted in reading but two cases of poisoning reported from its use. The details of these were meagre. One was a morphine-eater suffering with nervous prostration. Ataxia was present but did not last long. In experiments with dogs ataxia was constant, but this is the first case where it was manifest in the human. The other case was in a person affected with chronic myelitis accustomed to the nightly use of chloral. Sulphonal being substituted produced an exanthem lasting two days. Antipyrin caused the same in a sister of patient. Both cases recovered without any special treatment.

I desire to give a brief report of three cases illustrating some of its properties.

CASE I.—Male, aged thirty. I was called to see him in the beginning of a severe attack of enteralgia. He was suffering with acute pain, vomiting continually. The patient having abstained from the use of morphine for over a month and not wishing to revive his old habit, I concluded to try

sulphonal. I administered thirty grains, which were retained, and in twenty minutes patient was asleep. Sleep lasted six hours. Patient was drowsy for half a day, but expressed himself as feeling well.

Case II.—Male, aged forty, came to me seeking relief for a severe headache the result of alcoholic excess. I prescribed forty-five grains of sulphonal. He went to sleep in twenty-five minutes and slept seven hours. No pain in the head on arousing. This patient had used morphine to excess for years.

Case III.—Female, aged thirty-five, had been a great sufferer for several years with "bilious headache," having two attacks each month. The pain was very acute and relief could only be obtained by the inhalation of chloroform. During these attacks the stomach would retain nothing. Two months ago I administered at the beginning of one of these attacks thirty grains of sulphonal. Sleep followed in twenty minutes, lasting five hours; some pain still remaining, I gave fifteen grains more. This relieved the pain, but produced no sleep. Drowsiness lasted one day. Since this attack patient takes fifteen grains on manifesting symptoms of her trouble and has so far succeeded in aborting attacks. This patient, too, was addicted to the morphine-habit.

I have selected these cases out of many in which I have used sulphonal, on account of their addiction to the morphine-habit, as it has been stated that sulphonal has no effect during abstinence from morphine in those addicted to the morphine-habit. This is in direct contradiction to my own experience and that of others to which I will refer.

Dr. W. H. Flint, of New York, finds the effect of sulphonal particularly good in patients who had previously been addicted to the use of opium and other hypnotic drugs or were suffering from insomnia due to the withdrawal of these remedies; and Dr. Ruschugh Jena has obtained excellent results in the case of a morphine-eater.

Ott, of Prague, relates a case of hypochondriasis with arthritic disposition and temporary arhythmia of the heart, and the patient was accustomed to the injection of morphine. He slept well after the administration of thirty grains of sulphonal and the arhythmia always ceased a few minutes after its use.

The results from sulphonal in insane asylums has been exceptionally good. It has been found to be of special benefit in cases of self-pollution. I have used sulphonal in typhoid fever for nervousness and to produce sleep, and it met these troubles better than any agent I have ever used. I noticed no effect on the circulation or temperature.

In rheumatism it relieves pain much better than antipyrin.

In comparison with chloral and the modern remedies paraldehyde and urethan, the following advantages are apparent. Unlike chloral it does not depress the heart or irritate the stomach, but seems to have a sedative influence on the latter, and it is very easy to take, being in this respect much superior to paraldehyde, which is very disagreeable and its nauseous taste may continue long after its administration. Urethan is very uncertain in its action, and the reports concerning it indicate that it possesses very little virtue.

Sulphonal is a reliable hypnotic, has anodyne and analgesic properties. Its effects are quick and certain and it is practically free from bad after-effects. The majority of patients express a feeling of well-being after its use.

As regards the dose, I find thirty grains sufficient to produce sleep. It is odorless and tasteless, and therefore can be administered in powder. In repeating the dose it must be borne in mind that it is eliminated very slowly.

MEDICAL PROGRESS.

Hydracetin, a New Antipyretic.—Dr. Paul Guttmann, in the meeting of the Berlin Medical Society of May of this year (see report in *Wiener med. Presse*, No. 21, 1889), reported the results of his investigations with hydracetin, a new antipyretic. The drug is a white powder, odorless and almost tasteless, soluble in water only in proportions of one to fifty, however easily soluble in alcohol. Four to eight grains injected into a rabbit's peritoneum caused the animal's speedy death. Autopsy showed that death was caused by the powerful reducive and absorptive effect the drug had on the oxygen in the blood. Doses of one and one-half to two grains a day were sufficient to reduce the temperature 2° to 3½° F., and to cause profuse perspiration. One dose would keep the temperature down for five or six hours, after which it rose again with moderate rapidity. Guttmann has used the drug in a large number of cases of typhoid fever, phthisis, scarlatina, erysipelas, acute miliary tuberculosis, septicæmia, and also in eight cases of typical and severe multiple acute articular rheumatism. The action of hydracetin was always the same and accompanied with positive results. In acute articular rheumatism doses of less than a grain gave almost immediate relief to the pain which lasted for several hours. Hydracetin found further use in two cases of psoriasis in which a salve containing ten per cent. of the drug was used for less than a week, complete recovery resulting. In two cases of sciatica one-grain doses of hydracetin had a most happy anodyne effect, which lasted for several hours. No unpleasant accompanying or after-effects were ever observed to follow its use, further than a slight and temporary pallor of the face. Guttmann is of the opinion that not more than one and a half or two grains should be given daily. In cases of severe fever, such as typhoid, the above amount should be given in one dose, or in two doses an hour apart from each other. In articular rheumatism two daily doses of about three-quarters of a grain each seemed to be followed by the best results. The daily administration of one and a half or two grains should not be continued for over three days; after an interval, however, its use may again be resorted to. The

drug is equally valuable either as an antineuralgic or an antipyretic.

Petroleum Soap for Itch.—The following is recommended by DR. H. EMERY, of Paris, in the *Revue gén. de Clin. et de Thér.*, May 16, 1889, as most efficacious in obstinate cases of itch:

℞.—Petroleum	. . . .	50 parts.
White wax	. . . .	40 "
Alcohol	. . . .	50 "
Soap	. . . . .	100 " —M.

Rapid Cure of Chorea by Antipyrin.—According to DR. LEGROUX, in the *London Medical Recorder*, May 20, 1889, fifteen-grain doses of antipyrin, given three times a day, is a most speedy and effectual remedy in chorea. He has cured six cases within a month. Legroux's experiences are substantiated by GRIM, in the *Centralbl. für Nervenheilk.*, page 148, 1889, and also by LILIENFELD, in the *Centralbl. für die med. Wissenschaften*, page 784, 1887, who have also reported similar favorable cases.

Grafts of Frog's Skin in Chronic Ulcers.—In the *Rüsskaia Meditzina*, DR. FEODOSY NESTEROVSKY, of Bratzlav, speaks favorably of frog's skin-grafting, a method which was first proposed by Dr. Allen in 1884, and subsequently practised successfully by Drs. O. V. Peterson, of St. Petersburg,[1] Perez, Baratoux, Dubousquet-Laborderie, etc. Dr. Nesterovsky relates four cases of old-standing, intractable, extensive, and deep ulcers of the leg, foot, and thigh, where, after all ordinary means had failed, the transplantation of grafts of frog's skin was invariably followed by a permanent healing in from nine to fourteen days. Dr. Nesterovsky takes an ordinary water frog and keeps the lower portions of its body immersed in a sublimate solution (1:1000) for five minutes; then he pinches up a piece of skin on the abdomen with forceps, and cuts out as many grafts as are required, each the size of a finger-nail. Having washed the pieces as well as the ulcer with a 4 per cent. solution of boracic acid, he carefully places the grafts on the granulating surface, and covers the part with a layer of boracic gauze and a piece of tow, fixing the whole with wax-cloth and a starched gauze roller. The dressing is changed and the ulcer washed first on the third or fifth day. The writer summarizes his experience as follows: 1. In all cases of extensive and badly cicatrizing ulcers, skin-grafting is indicated. 2. Skin which is quite free from glands and hairs is most suitable for the purpose. 3. The frog's skin completely satisfies those conditions. 4. The method is simple, safe, easily used everywhere, cheap, and most effective. This method of grafting has, we believe, been tried with success by Mr. Stanley Boyd, of Charing Cross Hospital.—*British Medical Journal*, June 1, 1889.

The Effects of Splenectomy.—In the last congress of Italian surgeons, which was held in Bologna during May, 1889 (reported in the *Wiener klin. Wochenschrift*, May 23, 1889), the subject of extirpation of the spleen gave rise to most active discussion. DR. CECI, of Genoa, related a case of splenectomy, which was followed by swelling of the thyroid gland, fever, and emaciation, also complete hypertrophy of the tonsils. Later the general condition of the patient improved somewhat. The tonsils, on account of their condition, were excised. After this the thyroid swelling gradually disappeared.

DR. D'ANTONA, of Naples, reported a case of splenectomy which he performed in a child aged three. The patient had been suffering from a remitting fever of a severe and chronic type, and which no treatment seemed to alleviate. The spleen was greatly enlarged. After excision the wound healed by first intention, but the symptoms of fever did not abate. Later gastro-intestinal complications manifested themselves and the child died. Upon examination the spleen was found to contain large numbers of an as yet undescribed bacterium.

D'Antona does not consider the child's death due to the operation, and states that in similar cases he would certainly consider extirpation of the spleen indicated.

Hemostatic Collodion.—The following formula for hemostatic collodion, which is given by DR. PARESI, in the *Revue de Thér. méd.-chir.*, May 15, 1889, will be found very valuable as an application for abrasions and superficial wounds:

℞.—Collodion	. . . . .	100 parts.
Phenic acid	. . . .	10 "
Tannin } Benzoic acid }	. . .	āā 5 "

Apply with a camel's-hair brush.

Pilocarpine in Traumatic Tetanus.—DR. L. CASSATI, in the *Journal de Méd. de Paris*, May 26, 1889, reports three cases of traumatic tetanus which he has cured by heroic doses of pilocarpine given hypodermically. Since then he has experimented upon rabbits, inoculating them with the bacilli of tetanus and under the pilocarpine treatment only two out of nine died. The drug acts very quickly, all symptoms of tetanus disappearing in a few hours. Subsequent recovery is speedy and complete.

Creasote in Flatulency.—The antiseptic properties of creasote render it valuable in cases of flatulency and indigestion. DR. PEPPER, in the *Gazette hebd. de Méd. et de Chir.*, May 21, 1889, prescribes it in combination with alkaline salts, and gives the following emulsion:

℞.—Creasote	. . . . .	gtt. x.
Bicarbonate of soda	. . .	ʒij.
Pulverized gum	. . . .	q. s.
Water	. . . . .	fʒv.—M.

Dose, a tablespoonful an hour after meals. If the stomach is in an atonic condition and the gastric secretions are scanty, the following formula may be used to advantage:

℞.—Pepsin	. . . . .	ʒj.
Creasote	. . . . .	gtt. x.
Sub-carbonate of bismuth	. .	ʒj. —M.

Divide into thirty capsules. Dose, one, an hour after each meal.

Treatment of Angina Pectoris.—PROF. HUCHARD, in addressing the Hospital Medical Society of Paris, stated that, in his opinion, it was not the pain of angina pectoris that caused the profound distress of the patient, but rather the increased tension of the arteries. This, then, must be dealt with primarily. Preparations of iodine,

[1] Riforma medica, April 11, 1889.

used for a long period, nitrite of amyl, and nitroglycerine give good results.—*Deutsche med. Wochenschr.*, May 23, 1889.

Thiol as a Substitute for Ichthyol.—The Berlin correspondent of the London *Provincial Medical Journal*, in writing to the number of that journal appearing June 1, states that ichthyol has found a rival in thiol, a new product of chemical synthesis, obtained by artificially sulphuretting unsaturated hydrocarbons, and charging these with 10 per cent. of sulphur. Chemical and therapeutic researches prove its exact identity with ichthyol. Thiol consists of a brown fluid of the consistency of syrup; it is completely soluble in water, is totally inodorous, and has, therefore, a decided advantage over ichthyol. There exists also a dry thiol, which has two and a half times the strength of fluid thiol, otherwise having the same properties as the latter. Thiol is used like ichthyol in the following diseases: Acne, acute and chronic rheumatic arthritis, other rheumatic affections, contusions, decubitus, eczema, erysipelas, neuralgia, ischia, leprosy, frost-bites, prurigo, pruritus, ulcus cruris, burns, and scalds. On the initiative of Schweninger, thiol was tried at the Charité Clinic of Berlin, and Dr. Reeps reports on these trials in a very favorable light, as does also Dr. Buzzi, whose opinion is based on an even more extended clinical experience.

Dr. Reeps states that it may safely be concluded that thiol, externally applied in skin diseases, has positively the same effect as ichthyol. As their effect in these instances is identical, it may also be assumed that thiol will prove equally efficacious in other diseases where ichthyol has been employed. Reeps has taken internal doses up to two and a half grammes without discomfort or disturbance of the stomach; he believes, therefore, that it is comparatively harmless. It has been asserted lately that this is not the case with ichthyol, but he ascribes the adverse physiological effects of ichthyol to its obnoxious taste and odor, and these are entirely eliminated in thiol. He does not consider there is any further doubt that thiol and ichthyol are two exactly identical substances, and that thiol will serve to replace ichthyol when the natural sources of the latter remedy become exhausted; even now the discovery may be recognized as a great boon, which makes us independent of nature's supply of this valuable remedy. The following are the usually prescribed formulæ:

℞.—Thiol . . . . . ʒj.
Vaselin . . . . . ʒj.
Lanolin . . . . . ʒj.—M.

Make into ointment. S. For external use.

℞.—Thiol sicc. . . . . gr. ij.
Pulv. glycyrrhizæ . . . . gr. ij.
Glycerin tragacanth . . . . q. s.—M.

For one pill. S. One pill to be taken three times a day.

℞.—Thiol sicc. . . . . ʒj.
Zinc. oxid. . . . . ʒij.
Amylum . . . . . ʒj.
Talc . . . . . ʒij.—M.

For powder. S. The affected parts to be dusted with this powder.

Salol as a Dressing.—At the last meeting of the Hunterian Society of England, reported in the *Provincial Med. Journ.* of June 1, Mr. Corner exhibited several cases illustrative of the antiseptic power of salol (salicylate of phenol) as a dressing for wounds after the pads had been rendered aseptic by a 1:20 solution of carbolic acid. Salol has a pleasant odor, and could be used freely without fear of poisoning or irritating, and when dry formed a hard but friable surface. A case was shown where the wound was dressed with salol and left untouched for a month, and remained sweet.

Wiring the Phalanges.—Prof. Lewis, of the Wabash Hospital, reports in the *Kansas City Medical Index* for May, a case of ununited fracture of the first phalanges of the first and second fingers. After all other modes of treatment had failed, the fragments were wired together. The result was speedy and perfect union.

Treatment for Baldness.—Dr. E. Besnier says that the falling out of the hair may be checked, and a new growth started by the following treatment. The hair should be cut short and a mild sinapism or rubefacient applied to the scalp; then every five days the following lotion is to be applied:

℞.—Acetic acid } . . . āā q. s.—M.
Chloroform }

The above should be used cautiously, as it is an irritant, but stimulates the hair powerfully. In connection with the above, the following pomade should be used:

℞.—Salicylic acid . . . . gr. xv.
Precipitate of sulphur . . . ʒjss.
Vaseline . . . . . ʒv.—M.

This pomade should be applied fresh every morning, the scalp previously having been well washed. Fatty substances retard the growth of the hair, and should not be used.—*Journal de Méd. de Paris*, May 12, 1889.

Ephedrin and Pseudo-ephedrin.—At the Medical Congress of Bologna, Dr. Wreise reported the results of a series of experiments with the two alkaloids of the Ephedra vulgaris, ephedrin and pseudo-ephedrin. The first investigations with this drug were made by Dr. K. Miura, of Tōkyō, Japan. Wreise's results show that the action of ephedrin is rather uncertain; that, however, of pseudo-ephedrin is more constant. The latter acts as a strong mydriatic; a few drops of a ten per cent. solution will produce enlargement of the pupil lasting seven to eight hours. The action of the drug takes place in about half an hour after it has been dropped into the eye. Neither accommodation, refraction, nor sensibility of the conjunctiva or cornea were in any wise influenced by the drug.—*Wiener klin. Wochenschrift*, May 30, 1889.

The Influence of Parenchymatous Injections into the Spleen.—Questions concerning various affections of the spleen, as well as operations upon it, seem to have taken an important part in the Italian Congress of Surgeons held at Bologna, as reported in the *Wiener klin. Wochenschrift*, May 30, 1889. Dr. Beorchia Nigris read a paper on the influence of parenchymatous injection upon enlargements or tumors of the spleen. There was an extensive discussion regarding the relative value of different fluids for injection. Nigris said that he had tried water, Fowler's

solution, weak solutions of quinine and strychnine, etc., and had found that equally good results were obtained by injections of water as by any other substance. In all cases he observed the formation of connective tissue at the seat of the injection. This tissue in contracting or shrinking caused a decided decrease in the size of the spleen. Nigris is of the opinion that this phlogistic process is entirely independent of the nature of the fluid injected.

A Saline and Chalybeate Tonic.—DR. AUSTIN FLINT, in writing to the *New York Medical Journal*, states that after long and careful investigations, he has found the formula given below to be a most efficient chalybeate. Its action is most marked in cases of anæmia, loss of appetite, etc.:

℞.—Chloride of sodium	℥iij.
Chloride of potash	grs. ix.
Sulphate of potash	grs. vj.
Carbonate of potash (Squibb)	grs. iij.
Carbonate of soda	grs. xxxvj.
Carbonate of magnesia	grs. iij.
Precipitated phosphate of calcium	℥ss.
Carbonate of calcium	grs. iij.
Ferri redacti (Merk)	grs. xxvij.
Carbonate of iron	grs. iij.—M.

In capsules, No. 60.

Sig.—Two capsules three times a day, after eating.

This formula is put up in the form of compressed tablets by Frazer & Co., of New York, also as tablets made by Caswell, Massey, & Co., 1121 Broadway, and as sugar-coated tablets, made by Wanier & Imgard, 1322 Broadway, New York.

Dr. Flint gives the preference to the sugar-coated tablets, as the others sometimes produce slight nausea.

Iodides in Cardiac Affections.—DR. MASCAREL, in an article in the *Revue gênêr. de Clin. et de Thêr.*, May 30, 1889, says that he has found six to seven-drachm doses of iodide of sodium and iodide of potassium, given twice daily, exert a most beneficial action in cases of valvular endocarditis, especially when of a rheumatic nature. In conjunction with this treatment a strict milk diet should be enforced.

Phenol in Whooping-cough.—DR. ROTHE, in the *Revue gênêr. de Clin. et de Thêr.*, May 30, 1889, says that he has found phenol, in the following formula, most efficient in whooping-cough. Under this treatment the disease seldom lasts two weeks:

℞.—Phenic acid } Alcohol }	āā	grs. xxxj.
Tincture of iodine		gtt. xx.
Tincture of belladonna		f℥j.
Peppermint water		f℥iijss.
Syrup of opium		f℥ss.—M.

A half teaspoonful should be taken every two hours until the symptoms decrease in severity.

Antipyrin in Labor.—PROFESSOR PINZANI, of Bologna, says the *Wiener klin. Wochenschrift*, May 30, 1889, has found, by numerous experiments, that antipyrin considerably lessens the severity of labor, while it does not retard its natural course. When given hypodermically its action is manifested in about two hours, but if given by the mouth no relief or ease of pain is noticed until after four or five hours.

Dyspeptic Insomnia.—The following prescription, given by DR. THONIN, in the *Revue de Thêr. mêd.-chir.*, May 15, 1889, is claimed by him to be most effectual in relieving the sleeplessness which so frequently accompanies certain forms of dyspepsia:

℞.—Syrup of coca	℥ijss.
Hydrate of chloral	℥ij.
Bromide of soda	℥j.
Tincture of chloroform	gtt. xx.

Three doses, of a dessertspoonful each, should be given one hour apart from each other. No gastric irritation has been observed to follow its use.

Treatment of Granular Lids.—In writing to the *Kansas City Medical Index* for May, 1889, DR. F. M. SCOTT states that he has found the following method of treatment of granular lids most efficacious even in most severe and obstinate cases accompanied with pannus. The lids are painted with a weak solution of nitrate of silver (five grains to the ounce of water) four times a week, and immediately after washed out with a weak solution of salt and water. Five drops of the following should be applied daily by the patient:

℞.—Boracic acid	grs. xv.
Tannic acid	grs. x.
Glycerine	℥jss.
Rose water, q. s. to make	℥j. —M.

The Alkaloids Used in Eye Diseases.—The alkaloids most commonly used in ophthalmology, such as atropine, duboisine, hyoscine, eserine, etc., are usually applied in the form of sulphates. DR. GALEZOWSKI, in *L'Union Médicale* of June 8, 1889, maintains that these salts contain an excess of acid, and when used in the form of lotions or ointments quickly undergo decomposition, the acid being liberated. Their use in this form is, of course, very irritating to the eye. Galezowski therefore suggests that the sulphuric acid be replaced by boric acid and borates be employed instead of sulphates. The borates are far more stable and less irritating. Borate of atropine acts somewhat slower than sulphate of atropine, but it is far less irritating, less painful, and its action longer. Borate of cocaine is not so rapid an anæsthetic as the other salts commonly used, but it is equally as effective.

Chromic Acid for Perspiring Feet.—The Medical Department of the Prussian War Office reported last year the results of a series of experiments regarding the value of chromic acid in sweating feet. The drug was used in over eighteen thousand cases, all of which were reported.

It is best used in a five per cent. solution, and should be applied with a camel's-hair brush, the feet having been previously thoroughly washed and dried. The acid seems to harden and strengthen the skin; the moist and reddened portions become dry and smooth-looking, and the fetid sweat quickly disappears. In many cases three or four applications effected a permanent cure. Increased endurance for marching was immediately observable.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, JULY 6, 1889.

THE TREATMENT OF UTERINE TUMORS BY ELECTRICITY.

IT is but a few weeks since prominent neurologists of New York, in a discussion at the Academy of Medicine upon the application of electricity to the nervous system, expressed decided scepticism as to its lasting benefit for many of the conditions for which it is now used, and even showed an eagerness to banish one form of it—Franklinism—to a limbo whence it could not be recalled. These reactionary views did not proceed from inexperienced nor unthinking men, nor are we willing to believe that they signified that electricity as a therapeutic resource is to be relegated to the quacks. Such is the status, however, in the evolution of electricity as a therapeutic agent for nervous diseases.

A somewhat similar scepticism prevails in regard to uterine electro-therapeutics, in no department of which have more substantial results been obtained than in connection with myomata or fibro-myomata or fibroids, as they are commonly called; at least such is the assertion of the advocates of this method of treatment. Attempts at treatment with this agent were made long ago, and it will not do to ignore or belittle the efforts which were made by Kimball and Cutter, and Freeman, imperfect as they may have been in the light of the present attainments; nor the efforts of Sir James Simpson, which were still more imperfect, according to the testimony of Thomas Keith, who participated in them, and which accomplished no benefit, but rather did harm. It has remained for Apostoli to systematize and perfect a method of treatment for uterine fibroids which, in *skilful hands*, can be fairly called comparatively safe, comparatively painless, and efficient. This is the testimony of four such witnesses as Sir Spencer Wells, the Keiths—father and son, and Playfair.

The proposition, and we may say the doctrine, of Apostoli may be formulated in the following terms: Given an uterine fibroid tumor, large or small, with its accompanying inconveniences and perils—which include discomfort, pain, bleeding, weakness, and inability to attend to the customary duties of life—these may all be relieved, and the tumor may be reduced more or less in size, by the use of the galvanic current, with an intensity varying from 100 to 350 milliampères, from five to twenty minutes two or three times a week for a period of two or three months or more. Extraordinary precautions are required as to thorough cleanliness of all electrodes used, and the antiseptic principle is applied to the treatment as far as possible. The galvanic current may be introduced into the tumor through sharp-pointed electrodes which puncture the tumor, or one electrode may be introduced into the uterus or vagina, and the other laid upon the abdomen, the latter being very large, imbedded in wet clay, and adapted to high intensities and considerable diffusion. The other details as to electrodes of particular kinds, and other necessary instruments, need not concern us now.

The credibility of Apostoli's assertions is vouched for by witnesses of the highest respectability, including those whose names have been given. Furthermore, the gentlemen mentioned are entirely competent as surgeons and gynecologists to express an opinion. They have all been to Paris, have seen Apostoli's work, have learned his methods, and have made practical application of them themselves. What is still more remarkable, to one of them the world is more indebted than to any other man for developing abdominal surgery when its advocates were few and timid, and he has practised it with distinguished success for a considerable portion of a long life; while another of the same group has taught the world the possibilities of abdominal surgery by mortality statistics which are susceptible of little if any improvement. Keith—the successful surgeon, the man whose record in hysterectomy stands unrivalled—pleads for a cessation of hysterectomy for fibroid tumors until electricity has had a

thorough trial. This seems like a fair proposition, and in the face of such facts as the necessarily high mortality by the knife, even at the hands of the most skilful surgeons, it is incumbent upon gynecologists to make a fair, searching, and unprejudiced investigation into the merits of the case.

On this side of the Atlantic, opinion as to the value of this treatment has varied about as it has in England. It has its pronounced advocates who have done good work. Among them may be mentioned Lapthorn Smith of Montreal, Martin of Chicago, Engelmann of St. Louis, and others. Engelmann has even laid the subject, with clearness and enthusiasm, before the assembled gynecologists of Berlin, and this is the best way to lay an enemy's country under tribute. Acrimonious dispute has also not been wanting.

It is idle to expect that accident will never follow this treatment. He is foolish who would assert it, and he is more foolish who would believe it. We entirely disagree with those who think that electricity may be used in gynecology without much knowledge of its physics, at least safely and efficiently. If the best results are to be obtained, an understanding of the means to be used is as indispensable as in any other case in which the best results are sought.

Concerning the way in which the galvanic current acts in fibroid tumors, which has excited so much discussion, profitless as it seems to us, the most that can be said is that it causes impairment of nutrition. The results demonstrate that fact clearly enough, and all the speculations in regard to polar action, electrolysis, diffusion of current, etc., do not change or affect it.

A practical drawback to this method of treatment is the expense of the necessary apparatus. This will deter many from making the requisite trial of it, but it is to be hoped that it will not weigh with those who are constantly being called upon to treat fibroid tumors. What is now needed for the formation of a correct conclusion of the value of electricity in the treatment of uterine fibroids, is the record of experience of a number of careful observers.

THE TEACHERS OF HYGIENE IN EUROPEAN UNIVERSITIES.

THE University of Kiel has inaugurated a professorship of Hygiene, and Dr. Bernard Fischer has been appointed to the chair. There now remain only two Prussian Universities—those of Bonn and Königsburg—without such chairs. Dr. Fischer was one of Professor Robert Koch's pupils and accompanied him on that memorable journey into Egypt and India which resulted in the discovery by Koch of the bacillus of Asiatic cholera. Another companion on that voyage was Dr. Gaffky, now Professor of Hygiene at Giessen. Other pupils of Koch occupy the same department of instruction in other universities, as Dr. Gärtner in Jena, Dr. Löffler in Greifswald, Dr. Hüppe in Wiesbaden, Dr. Becker in Leipsic, Dr. Fränkel in Berlin, and Dr. Frank in Naples. These are all members of the younger generation of instructors and are adepts in the laboratory methods of Koch. Dr. Fischer's original work has been exerted in two directions chiefly, one in the application of bromine to disinfection, another in the study of the phosphorescence of the sea.

DR. HENRY C. COE has been appointed Professor of Gynecology at the New York Polyclinic, to fill the vacancy occasioned by the death of Dr. James B. Hunter.

A CONSIDERALE space has been given by the public press to the newly proposed plan of disposal of corpses by desiccation or mummification. The promoters of the plan claim, with no little show of reason, that it has all the advantages that pertain to cremation, and has one manifest advantage over the latter in that the possibility of the proof of crime is not destroyed by the combustion of the body. The theory of the process implies that the gases only—given off by decomposition—shall undergo combustion, currents of dry air being in constant motion over the bodies placed under this method, sometimes called the "new mausoleum plan."

WE are informed that a French translation of Dr. Senn's work on *Surgical Bacteriology* will be issued shortly by a Paris publishing house.

WE learn from a German contemporary, that Dr. W. Roeventhal, who has recently been studying the influence of salol upon the cholera bacilli, in the Cornil laboratory in Paris, has received a special commission from the French Government to go to Tonkin to continue his experiments on the human subject—that is, to test the drug in the disease itself. High rank in the French Marine Service has been conferred upon him, and he has been made entirely independent in his actions. The expenses of his researches will be borne by the French Government.

This is the first case of a physician, who is still a German citizen, receiving an appointment of this kind.

ACCORDING to the *London Medical Recorder* of May 20, 1889, no fewer than 1168 human beings were destroyed by snakes in the Bombay Presidency during 1887, and over 300,000 venomous snakes were destroyed.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting, held at Newport, R. I., June 25, 26, 27, and 28, 1889.

(Specially reported for THE MEDICAL NEWS.)

GENERAL SESSION.

FRIDAY, JUNE 28TH.—FOURTH DAY.

The Association was called to order by the President, at 10 A.M., and opened with prayer.

DR. W. H. WELCH, of Baltimore, then delivered the

ADDRESS IN STATE MEDICINE,

which will be published in full in a later issue of THE MEDICAL NEWS.

MISCELLANEOUS BUSINESS.

The Section on State Medicine reported that the Committee on Infanticide had made no report, and asked that the Committee be dismissed in accordance with the By-laws.

DR. N. S. DAVIS moved that a committee be appointed to secure excursion rates over the most feasible routes to the International Medical Congress, in Berlin. The motion was carried.

Drs. Pancoast, Surgeon-General Hamilton, A. Nelson Bell, and N. S. Davis were so appointed.

The following were announced as

DELEGATES TO FOREIGN MEDICAL ASSOCIATIONS:

I. N. Quimby, J. W. Jackson, F. J. Lutz, S. E. Solly, J. F. Noyes, J. M. French, A. J. Fuller, E. Cutter, J. H. Knight, I. N. Love, J. M. Matthews, W. C. Wile, W. F. Hutchinson, A. N. Owen.

Delegate to the Canada Medical Association, Dr. P. S. Conner.

THE JOHNSTOWN CALAMITY.

SURGEON-GENERAL HAMILTON offered a resolution expressing sympathy with the unfortunate members of the community of Johnstown, Pennsylvania, and especially with the members of the profession. Also that the Treasurer of the Association be authorized to remit the annual dues of any member residing there.

The Secretary then read the following list of

OFFICERS OF SECTIONS

for the ensuing year.

SECTION OF MEDICINE.—*Chairman*, J. H. Musser, M.D.; *Secretary*, H. McColl, M.D.

SECTION OF SURGERY.—*Chairman*, B. A. Watson, M.D.; *Secretary*, J. B. Deaver, M.D.

SECTION OF OBSTETRICS.—*Chairman*, W. W. Potter, M.D.; *Secretary*, J. E. Hoffman, M.D.

SECTION OF STATE MEDICINE.—*Chairman*, J. B. Hamilton, M.D.; *Secretary*, F. S. Bascom, M.D.

SECTION OF OPHTHALMOLOGY.—*Chairman*, S. C. Ayres, M.D.; *Secretary*, E. J. Gardner, M.D.

SECTION OF DISEASES OF CHILDREN.—*Chairman*, I. N. Love, M.D.; *Secretary*, Dr. Bush.

SECTION OF DERMATOLOGY AND SYPHILOGRAPHY.—*Chairman*, I. E. Atkinson, M.D.; *Secretary*, W. T. Corlett, M.D.

MISCELLANEOUS BUSINESS.

The Secretary, Dr. Atkinson, moved that he be authorized to refer the reports of the Secretaries of Sections, which he had received, to the Committee on Publication. The motion was carried.

The President, Dr. Dawson, through the Secretary, moved that a vote of thanks be extended to the Chairman of the Committee of Arrangements, Dr. Storer; to the Governor of Rhode Island; to the people of Newport, and to the large number of individuals who had materially contributed to the entertainment of the members of the Association during their stay in the city.

Dr. Pancoast, of Philadelphia, responded to the remarks of Sir James Grant at the Thursday session. In conclusion he moved that a vote of thanks be extended to that distinguished gentleman for his presence and good wishes, and that it is the desire of the Association that he may soon again be present at its meeting.

Sir James Grant then expressed his gratitude as well as that of the profession of Canada for the cordial welcome which he had received at the hands of the Association, and for the handsome manner in which he had been entertained during this most interesting meeting of the American Medical Association.

The Association then adjourned.

SECTION OF OBSTETRICS AND GYNECOLOGY.

WEDNESDAY, JUNE 26TH.

(Concluded from page 731.)

DR. A. VANDER VEER, of Albany, N.Y., read a paper on

CONCEALED PREGNANCY: ITS RELATIONS TO ABDOMINAL SURGERY,

based upon a study of seventy cases of abdominal section in which pregnancy existed as a complication which had not been diagnosticated. It was observed that the most eminent operators, as well as those of few opportunities, had made the same error relative to pregnancy. A diligent effort had been made to obtain the histories of reported cases, and the library of the Surgeon-General's Office had been thoroughly searched, in addition to three hundred circular letters which had been sent to surgeons in this country and in Europe.

The results of these researches were tabulated in the author's paper, and though incomplete they contained all accessible literature. Abstracts of ten cases were given, including two which came under the author's personal observation. There were twenty-six cases in which pregnancy was complicated with fibroid tumors,

and no diagnosis had been made. The indications for operation had depended upon a rapidly growing abdominal tumor of obscure character, and great distress on the part of the patient. In the majority of the cases there had been no symptoms of pregnancy. Rapid growth and changes in the consistency of the tumor had been observed in nearly all the cases, yet pregnancy had, in many of them, been unsuspected. Rapid growth *per se* might be fallacious as an evidence of pregnancy, for it might depend upon malignancy or other conditions. Amenorrhœa had been observed in eleven cases, and mammary changes in four. In the earlier months of pregnancy there might be even excessive flowing, such a cause frequently resulting in abortion in cases of fibro-myxoma.

The physical signs of pregnancy, prior to the fourth month, might be obscured or concealed by the presence of fibro-myxoma. The uterine sound had been used in nearly all cases and only served to confirm the erroneous diagnosis. Again, pregnancy might be extra-uterine or in a rudimentary horn of a bi-cornuate uterus. The author did not intend to affirm that the diagnosis of pregnancy prior to the fourth month, as a complication of fibro-myxoma was impossible in all cases, but did believe that the diagnosis was, at best, a matter of presumption, and that it was often impossible when immediate operative interference was demanded. In only three of the reported cases did error occur after the fifth month.

Nine abdominal sections had been classified in which the incision revealed a pregnant uterus alone. Five cases occurred early in the history of abdominal surgery when methods of differential diagnosis were not as well taught and practised as now. Hydramnion as a complication of pregnancy led to abdominal section in two cases. The cases of Doctors Prince and Varian illustrated the utter unreliability of the statements of unmarried women with abdominal enlargement, whatever their reputation for chastity might be. Pregnancy as a complication of ovarian cyst had been frequently met with, and had not always been diagnosticated. In twenty-eight of the collated cases there had been no symptoms, except that in one there had been amenorrhœa. Should there be the slightest suspicion of pregnancy the use of the uterine sound is positively contraindicated, as abundant experience had shown that we had no right to induce abortion before performing ovariotomy.

From the facts which had been obtained the following conclusions were justifiable:

1. From the study of these sixty-eight cases the author was convinced that errors of diagnosis frequently depend upon conditions which make it absolutely impossible to avoid the same diagnostic conclusions should the same conditions recur in other cases.

2. It would seem to be the duty of every operator before making an abdominal incision, to secure by his own efforts or by those of a sufficiently qualified operator, a fully classified written statement of the facts which make up the clinical history of the case, together with the results of the physical exploration made by the operator and his consultants, a formal blank statement being used so that no facts may be omitted. No part of this duty should be delegated to *internes* of hospitals, except under proper supervision.

3. The probable diagnosis should be based upon the physical signs expressed in the notes, corroborated, with few exceptions, as in the case of unmarried and ignorant patients, by the rational signs contained in the clinical history, and not by simple abdominal palpation and "the dim" light of a pelvic examination.

4. Should the slightest probability of pregnancy exist it should be clearly stated to the patient and to her friends.

5. The necessity for operative measures and the consequences of delay or neglect should be carefully stated to the individuals concerned, before obtaining their formal consent to an operation.

6. Every operator should report all such cases *in full*, that the methods of diagnosis may be improved if possible.

7. The profession at large should maintain that pregnancy *may be* absolutely concealed, especially prior to the fourth or fifth month, by other intra-abdominal conditions.

THURSDAY, JUNE 27TH.

The papers of the previous session being, with one exception, concerned with the

PATHOLOGY, OR SURGERY OF THE ABDOMEN,

or its contents, were discussed together. The discussion was participated in by Drs. Polk, Price, Baldy, Hoffman, Parish, Dudley, Gordon, and several others. The following is a brief *rêsumê* of this discussion:

Dr. Johnson had done well in calling attention to the possibility of infection by the bacillus of tetanus after ovariotomy, and operators should not forget that their horses or their stables might be media for this variety of infection. The short list of cases cited by Dr. Johnson was increased by cases mentioned by Dr. Gilman Kimball and Dr. Parvin, all of which would be incorporated in Dr. Johnson's paper.

Concerning accidents to the bladder in connection with laparotomy, it was thought singular by Dr. Price that the mortality should have been great. In general, while there was the possibility of accident even to the most careful operator, as Dr. Jackson had affirmed, it would seem as if the method which is adopted by many operators, of carefully lifting a small portion of the peritoneum or what is believed to be the peritoneum upon a tenaculum or forceps, and isolating it from the underlying structures of whatever character, would be sufficient to enable one to avoid wounding either the bladder, the intestines, or any other structure which one does not intend to penetrate.

No objection was raised to Dr. Parish's classification of pelvic abscess, and it was generally believed that it placed the profession upon the position which was established many years ago by Bernutz and Goupil. Other theories of pelvic abscess, notably those of Emmet and Thomas, were now believed to be untenable, and while some operators might err in regarding the large proportion of these abscesses as due to tubal or ovarian disease, it was certainly true that such disease was the causative factor in very many cases. Areolar abscess, also, was not limited in its etiology to conditions associated with pregnancy, but, as the author of the paper had said, might originate from traumatism or infection.

As to the treatment, the greater number of the disputants believed in laparotomy in most cases, if the abscess were located within the abdominal cavity.

The discussion of Dr. Vander Veer's paper on

CONCEALED PREGNANCY

elicited the narration of a large number of cases in which errors of diagnosis had been made, and showed that even with the greatest care in obtaining histories and in making examinations such errors would occur. It was believed that it did not necessarily reflect unfavorably upon a gynecologist, in the eyes of his colleagues, though it might in the eyes of the friends of the patients, if, after suitable precautions had been taken, a mistake should sometimes be made.

DR. S. C. GORDON, of Portland, Me., reported a

CASE OF EXTRA-UTERINE PREGNANCY,

in which a successful operation had been performed after the rupture of the tubal sac. This was the speaker's second successful case, his first having been operated upon in 1886. The latter was the third successful operation for this condition which had been performed in this country. The history of the case, in brief, was that the patient missed her menstrual periods between the months of February and June, 1888. In the latter month she had two severe attacks of pain and prostration, in which rupture of the sac occurred. She rallied from both of them, and continued in a fair state of health until November, having menstruated the two previous months and also having a profuse leucorrhœal discharge. When seen, in November, by the speaker, she had a small tumor to the right of the uterus, and the condition was diagnosticated as a tubal pregnancy with associated peritonitis, or a condition which resulted from that.

The operation was performed in January, 1889, and the diagnosis was verified, a three and a half months' fœtus being found. The fluid of the fœtal sac had been absorbed, and lying at the bottom of the sac was found a small and very hard blood-clot. The patient had entirely recovered within five weeks after the operation.

The point which the speaker made was that as soon as a diagnosis of tubal pregnancy had been made an abdominal operation should be performed, as the condition was a constant menace to the patient's life. He was not in favor of using electricity in any form for this condition as he believed it was not a radical measure, and if the fœtus were killed the products of conception would still remain, which not improbably might cause a condition which would necessitate laparotomy. It was better to perform laparotomy before this condition occurred.

DR. W. H. TAYLOR, of Cincinnati, reported a case of

EXTRA-UTERINE PREGNANCY TREATED BY GALVANISM,

in which there were some evidences that rupture had occurred, and it was believed that the diagnosis of tubal pregnancy was clear and distinct. The galvanic current was used with an intensity of one hundred and twenty-five milliampères for a suitable number of times, and the subsequent history was that of complete recovery and well-being of the patient, and gradual diminution in the size of the tumor. It was considered that the electrical treatment had produced a cure in this case.

This paper and that of Dr. Gordon were discussed together.

Dr. JOSEPH PRICE, of Philadelphia, believed that the opinion advanced by Dr. Gordon was correct, namely that tubal pregnancy should be treated by abdominal section as soon as recognized. He did not believe that temporizing with electricity or any other agent was warrantable. Electricians admitted the propriety of laparotomy after rupture had occurred when the conditions had become complicated and the patient's chances of recovery had diminished. Why should they not admit that the same operation should be performed before the unfavorable complications had arisen?

DR. BALDY, of Philadelphia, believed that laparotomy should be done when a diagnosis of tubal pregnancy had been made, and further that it should be done if the diagnosis were not clear and there were only suspicions pointing to ectopic gestation. He failed to be convinced by the statistics of those who had reported series of cases of this character which had been cured by electricity. What had become of the products of conception in such cases? If tubal pregnancy had existed and the fœtus were killed by electricity it would produce the same condition for which laparotomy was now so frequently done, viz., pelvic abscess in some form, hence it was unjustifiable.

DR. E. W. CUSHING, of Boston, approved of the sentiment expressed in Dr. Gordon's paper. He was undecided as to the proper course to pursue in cases in which rupture had taken place, the patient had rallied, but a hematoma appeared to have resulted. It was questionable whether in the uncertainty of such cases laparotomy should always be performed.

DR. A. F. CURRIER, of New York, objected to the implication that men who had had large experience in tubal pregnancy, like Thomas, for example, were unable to make suitable diagnoses. The published statistics of such men certainly did speak in favor of the electrical treatment of tubal pregnancy, especially in view of the success which they believed they had attained by such treatment. It was by no means certain that abscess would follow the death of a fœtus by electricity, as had been implied, and it was not improbable that in many cases the absorption of the products of conception did occur when the fœtus was destroyed prior to the third month, as Thomas had advised. The experiments of Leopold, quoted by Thomas, were in point in this connection, and he believed that all such statements were entitled to a fair and judicial hearing.

Personally, however, the speaker was entirely in accord with Dr. Gordon, and had placed himself on record in the report of a case, published two or three years ago, favoring immediate operation as soon as a diagnosis of ectopic gestation could be made. This might lead to occasional errors, and had done so in three recent cases of which the speaker had knowledge, and this proved the importance and timeliness of the paper on concealed pregnancy which had been read by Dr. Vander Veer.

The speaker was also glad to indorse the plan of immediate operation which had been first advocated by Prof. White, of Buffalo, in behalf of his friend, Dr. Janvrin, of New York, who had earnestly advised this method, and had published an important case in which the inability of electricity to avert a fatal result was painfully apparent.

DR. A. B. CARPENTER, of Cleveland, O., then read a paper on

ALEXANDER'S OPERATION, WITH A NEW METHOD OF SECURING THE ROUND LIGAMENTS.

The question as to the utility of this operation seemed to be settled, but the speaker believed that its greatest utility was in cases of prolapsus. When the operation is done for retroversion he believed that great difficulty might exist in finding the ends of the ligaments, these structures having undergone much traction and consequent thinning. In prolapse he believed the case was otherwise, that the structures involved in the prolapse underwent hypertrophy, and among them the round ligaments. They were, consequently, much easier to find than in cases of backward displacement.

The ligaments having been found, the author's method consisted, after having drawn them out to a sufficient extent and raised the uterus to its normal position, in passing a single silver wire suture through the ligament and the pillars of the ring, as a sort of anchorage suture. The excess of ligament which had been drawn out was then cut off near the ring, and the stump sutured with catgut to the contiguous structures. A drainage-tube was then introduced and the wound closed. Both sides having been thus treated, posterior colporrhaphy should be performed and a Hodge pessary introduced, to be worn by the patient until all the structures are firm under their new conditions. The wire suture which was introduced was intended to be retained permanently.

DR. A. F. CURRIER, of New York, criticised the author's plan of using a permanent silver wire suture by expressing fear that it might, sooner or later, be a source of irritation, perhaps of abscess. Certainly this would be so unless the wire were entirely aseptic, and, in order to be certain as to that point, one must prepare it himself. Wounds made in Alexander's operation seemed to be very prone to suppuration, and, even with very careful operating, the presence of so much fat and cellular tissue was an inviting field for a septic process. He differed with the reader of the paper in believing that the round ligaments could readily be found in prolapse. Of course, experience resulted in skill, and those who, like Kellogg, of Battle Creek, had done the operation many times, were familiar with all the complications and uncertainties which might arise in searching for the ends of the ligaments.

The speaker concurred with the reader of the paper as to the utility of the operation in many cases of prolapsus and backward displacement, and also believed in the simultaneous operation of colporrhaphy and the subsequent use of a pessary.

DR. ELIZA J. C. MINARD, of Brooklyn, presented some clinical statistics in favor of

FREE DISPENSARY AND HOSPITAL WORK.

Aside from the great value of our numerous dispensaries and hospitals as means of charity, we should never lose sight of their value as means of education. Those who were most skilful in surgical and medical work had almost invariably passed years of apprenticeship in dispensaries and hospitals. It might be considered that such long experience in what might to some seem drudgery was the price of skill. In this respect, also, would be apparent the value of the various post-graduate schools which furnished opportunities denied to the average practitioner, especially in early professional life. A word was also spoken in defence of those who performed the so-called mutilating operations upon women. It seemed strange that any defence should be required for the removal of organs which were usually so diseased that their function was abolished, and which, while they remained in the body, were a constant source of pain and distress. The results which have usually followed such operations should speak with sufficient clearness as to their value and the relief which they are wont to bring.

DR. JOSEPH HOFFMAN, of Philadelphia, read a paper on

CRANIOTOMY AND ITS INDICATIONS.

There could be no doubt that there were conditions in which craniotomy was an operation which should be performed. It was extremely desirable to know what place it should occupy in view of its merits or its faults. If the long list of indications which some writers have given is to be taken seriously, then Tyler Smith's plea for the abolition of the operation is worthy of consideration. These alleged indications certainly showed to what an extent the operation had been abused. The object of craniotomy must be considered to be the saving of the mother's life, especially in cases in which the fœtus is already dead.

The general indications for the operation should be fœtal deformity, including hydrocephalus, monstrosity, or any serious deformity which can be appreciated as an obstruction to labor, and pelvic deformity of varying degrees, not including those cases in which the conjugate diameter was two inches or less. As to the morality or immorality of the operation, in the abstract, the accoucheur could not deal with that question. The purpose of the operation was conservative—to save the mother's life by sacrificing the child's, if necessary, one life being lost instead of two.

For those cases in which the conjugate diameter was two inches or less, the Cæsarean section had long ago been advocated by Hodge and others, when that operation offered far fewer chances of success than it now does, the direction being given then as now that it be performed early. The speaker could not agree with those who advocated early hysterectomy, as did Tait, or Cæsarean section, on the ground that they were simple operations. For any operation of this character skill was required. As an argument in favor of craniotomy it must also be admitted that many infants which are born after protracted labors, perhaps after instrumental delivery, are born dead, and that many others, even if born alive, have been so injured in the process of parturition that they survive but a few hours or days.

DR. LOVEJOY, of Haverhill, Mass., was in full accord with the reader of the paper. In an experience of more than three thousand labors during forty years among people who were largely of Irish nativity, he had found it necessary to perform craniotomy on a number of occasions. He believed it to be not more difficult than forceps operations, and not so dangerous as version. The indications with him had been contracted pelvis, prolonged labor, etc. In none of his cases had there been a maternal death.

DR. A. F. CURRIER, of New York, objected to the idea that craniotomy could be considered in any sense a

simple operation. There was not merely the destruction of the child and its extraction to be considered, but there were the soft parts of the mother as well. He had seen serious injuries to these at the hands of one of the most skilful operators in the Vienna Maternity Hospital. In his own experience he had found the operation extremely difficult, and it was one of the operations which one did not care to do very often.

DR. WILLIAM H. PARISH, of Philadelphia, had never done the operation upon a living child. It was warrantable to perform it if the child were dead and the mother's powers were failing. With the advantages and the comparative safety of the Cæsarean section at the present time craniotomy should be less frequently performed. The operation was a cruel one, and, as usually performed, unjustifiable. It was not enough that the father and mother consented to the destruction of the child. They had no right to give away the child's life, and the child had rights which should be respected. As a rule, he would say that craniotomy upon a living child was not justifiable.

DR. HENRY D. FRY, of Washington, D. C., agreed with the previous speaker that the operation should be done as infrequently as possible, and was also of the opinion that it was done when it should not be.

DR. WILLIAM H. WATHEN, of Louisville, spoke with great earnestness and feeling respecting those who found occasion to do this operation frequently. So abundant are the resources of modern obstetrics, so great the success of careful and conservative obstetricians, that it should not be allowable for the opinion to go forth that the Section regarded with any favor the frequent performance of this destructive operation. He quite agreed with a previous speaker that it should not be done upon a living child.

DR. E. F. WALKER, of Providence, R. I., reported a case of a

DOUBLE-HEADED MONSTER.

This most rare and beautiful specimen of ischiopagus was exhibited in an excellent state of preservation. The author had been able to obtain but a meagre history of the labor in which the specimen was born. The mother was attended by an ignorant Irish midwife, and the details which she had given were unsatisfactory. The midwife would not reveal the name of the mother, so that she could not be interviewed. The mother was a married Irishwoman, thirty years of age and a primipara. Her labor began in the afternoon of July 15, 1888; the midwife ruptured the sac at 1 A. M. the following morning, and the pains continued with additional severity until 5 A. M., when the entire fœtal mass came away, the placenta following after an interval of five minutes. There was little hemorrhage and the midwife was unable to say whether there had been much injury to the soft parts. The patient recovered rapidly, was doing her work again within a week, and was now pregnant again. The monster lived twenty-six hours, cried at birth, and took milk freely by both mouths. Its weight was about fifteen pounds. There was one placenta, one cord, no history of fright, injury, or anything else that was unusual during pregnancy, as far as could be ascertained.

The mass was crescentic in shape, its longest surface following the line of the abdomen, and measuring twenty-one inches from vertex to vertex. It consisted of two bodies joined together at the buttocks, with a head at each end. The larger body has a trunk, two arms, two legs, and is well developed. The smaller one has the right arm and leg well developed, the left forearm and hand are deformed, the left foot and leg are also deformed. The left hand has but three fingers, which are of unusual length; the left foot has a short little toe, caused by absorption of the metatarsal bone; the third and fourth toes are webbed. At the umbilicus of the larger child is a placental-shaped mass, 3½ x 4½, convex outwardly, to which is attached a cord which went to a normal placenta. The umbilical mass is firm and lobulated.

The smaller child has a protuberance springing from the back of the neck, which is suggestive of spina bifida. It is soft, apparently contains fluid, and measures 4 x 3. The larger child has, apparently, an imperforate anus. Between the left thigh of the larger and the right thigh of the smaller is the vulva, having an undeveloped labium majus upon the right side.

SECTION OF THE DISEASES OF CHILDREN.

J. A. LARRABEE, M.D., of Louisville, Ky., Chairman.

TUESDAY, JUNE 25TH.

THE CHAIRMAN, DR. J. A. LARRABEE, read a short

INTRODUCTORY ADDRESS,

referring in eloquent terms to the labors of the members of the Section and to the historic associations of the place of meeting. Pediatrics, he said, is not a forced specialty, torn from the tree of medicine. The diseases of infancy and childhood have something in common with the diseases of adult life—nomenclature—but differ so widely in course, duration, and consequences as to be fitly the subject of especial study. Still, as in Addison's vision of the bridge of life, the pitfalls are thickest at the entrance, and much that would assist to reduce infant mortality might be learned through the labors of a committee on vital statistics of infancy, to be appointed each year and to report at a stated time.

He also referred to the subject of infants' foods, and to assertions made by certain manufacturers tending to throw discredit upon the Section, and advised the passage of a law prohibiting the publication by manufacturers of expressions of opinion made in the Section.

On motion, a vote of thanks was extended to the Chairman, and a Committee, consisting of Drs. Love, Brush, and Watson, with the Chairman, was appointed to consider and report upon the recommendations contained in the address.

DR. T. B. GREENLEY, of West Point, Ky., then read a paper on

THE MANAGEMENT OF INFANTS DURING THE FIRST YEAR.

Improper food, neglect, unsanitary surroundings, and infanticide are, he said, the great causes of infant mortality. Syphilis kills a large majority of those dying in the first two months of life. Licensing and inspection of prostitutes would diminish this disease. Among the recommendations made, were the wearing of caps and bandages, and, when artificial feeding is necessary, the use of cow's milk undiluted, in order that the stomach should not be unduly distended by the excessive amount needed if diluted.

DR. SEARS, of Texas, had no doubt that proper food, clothing, and ventilation would diminish early mortality. He agreed with the reader that the commencement of life was all important. Some children starve in the midst of plenty through ignorance on the part of mothers as to the time, quantity, and manner of feeding. He thought flannels should be worn until the seventh year of age.

DR. WILLIAM PERRY WATSON, of Jersey City, objected to the wearing of caps by infants. Keep the head cool and the extremities warm. There is no reason why an infant should have a simple tonsillitis or laryngitis, any more than a simple nasal catarrh; but we know very well that, except in syphilitic cases, we do not have snuffles. If head and neck are left uncovered, children grow up less liable to croup and sore throat, etc.

DR. CHRISTOPHER, of Cincinnati, thought it incorrect to say "no snuffles without syphilis."

DR. WATSON qualified his remark by saying that if the head is left uncovered, very few non-syphilitic infants have nasal troubles.

DR. CHRISTOPHER referred to the advice of the reader of the paper to take sick children to the country. All were familiar with the improvement that change of air wrought, especially in weak and bottle-fed children. Bowel troubles, prone to recur, disappear on change of location. In institutions we are careful to disinfect stools, etc., but in private homes we are not likely to think it necessary. Is there not an infected atmosphere here, too, from which, when removed, the child naturally recovers?

DR. BRUSH, of Mt. Vernon, N. Y., thought it unnecessary to feed milk to infants during the first two or three days. Very few mothers have milk until the third day. He objected to the recommendation of milk and lime-water in cholera infantum. In cities the first thing is to stop milk at once.

DR. LATIMER, of Baltimore, thought that where the infant starts free from disease and parents are healthy, the child should be put to the breast within a few hours and continue at stated intervals. As a substitute for mother's milk, cow's milk is the most available. He preferred Meigs's method of preparation, after which it should be sterilized. The quantity must be determined by observation, as children differ greatly. To nurse infants more than once or twice during the night is injurious both to the mother and the child.

DR. FARRINGTON, of New York, does not feed the newborn infant—the child cries not from hunger. It is well to put it to the breast every two hours, to establish good habits.

DR. GREENLEY said that his recommendation as to caps was meant only to apply to the winter season; especially in the district in which he practised was it necessary. His recommendation of milk and lime-water in cholera infantum was as a medicine to allay nausea, not as a food. He excludes all food during the acute symptoms.

SECOND DAY—WEDNESDAY, JUNE 26TH.

DR. PETER HOOPER, of Philadelphia, read a paper on

THE INTESTINAL DISEASES OF CHILDREN DURING HOT WEATHER.

He advocated the abstraction of heat from the patient by cool bathing, cold drinks, cracked ice in the mouth, ice bags to head, spine, and abdomen. Lumps of ice should be placed in the room to cool the air. Enemata of tepid or medicated water to wash out the colon were advised in cases attended by offensive discharges. In cholera infantum there should be absolute rest and abstinence from food for twenty-four hours. The best treatment is prophylaxis. Cow's milk is the best artificial food, and in some cases undiluted. Plenty of cool, fresh air with moderate sunshine, but without exposure to direct rays of sun. Flannels should be worn the year round, and an abdominal bandage day and night. The child should be bathed every night and every morning.

Probably the heroic treatment of the future will be to open the bowel and wash it out.

Inunctions of warm oil soothe and nourish, allay restlessness and diminish fever. Pepsin used in intestinal diseases should be soluble and free from inspissated mucus.

DR. S. SOLIS-COHEN, of Philadelphia, commended the use of cold water and ice, internally and externally, as advised in the paper, rather than chemical antipyretics, which are usually depressing agents, in cases where reduction of temperature is indicated.

DR. LARRABEE believed it to be important to distinguish between the various diseases under discussion. Are they all of the same etiology and do they admit of the same treatment? In cases due to heat, thermal diarrhœa, there is no agent equal to cold. He differed from Dr. Hooper in his understanding of the term cholera infantum. Cholera infantum does not have green, slimy, lumpy stools. It is probably caused by a ptomaine, and it is the analogue of cholera in the adult. Suddenly the child is seized with purging and vomiting. There are profuse watery discharges. There is a serous exosmosis, and, in young infants, the fontanelle sinks and the expression is changed. The child becomes pinched, blue, and cold. It lingers, sinks, and finally dies.

Cases of this kind must be differentiated from thermal diarrhœa. The treatment must be applied instantly. We cannot wait to get rid of the ptomaine, or to make the bowel aseptic. For ten years or more he had treated such cases by immediate hypodermatic injection of morphine and atropine. About $\frac{1}{200}$th gr. of the former, and a very minute dose of the latter. He dissolved in an ounce of water a pellet consisting of $\frac{1}{4}$ gr. of morphine and $\frac{1}{60}$th gr. of atropine, and used about ten drops in a child a year old. The treatment had been thoroughly successful. It changed the osmosis. To correct the local conditions no drug excels calomel. We use it as an antiseptic, our fathers used it to move the liver. The explanations differ, but the result is the same. He objected to bandages. In entero-colitis evacuation is the proper treatment, but he preferred salines to relieve the strangulation of the vessels, according to the best surgical practice in peritonitis. Inunction of oil does more than simply lubricate and protect, it is a stimulant to the peripheral nerves.

DR. I. N. LOVE, of St. Louis, said that diseases of infancy are due to interference with and interruption of nutrition. The first month is the most important. Next to a wet nurse for an infant deprived of its mother's breast is a good healthy cow, or goat. The milk should be sterilized according to the plan of Rotch, by steaming in bottles to 180° F., and then tightly closing the bottles.

But in some cases artificial food must be used, because milk cannot be digested however prepared. Mellin's and Carnrick's foods had given him satisfaction, as had Bovinine in some cases. If feeding is properly accomplished, we would not have to discuss treatment of intestinal diseases. Mercurial treatment is the best. Cool baths should be given at proper intervals, and cool sterilized water to relieve thirst and prevent over-feeding. He advocated the flannel bandage, and confirmed Dr. Larrabee's reports of the good effect of morphine and atropine hypodermatically in cholera infantum.

DR. W. PERRY WATSON referred to the practice of exposing the legs of children for fashion's sake as productive of disease. He keeps the extremities and the abdomen covered, the head cool. In many cases milk, no matter how prepared, cannot be retained. He stops it and uses a remedy which he learned from Dr. Brush, oatmeal water with a little salt and sugar. It is given cool, in small quantities and at frequent but regular stated intervals. In the meantime, if the child cries, a teaspoonful of hot water may be given as often as necessary. Cholera infantum usually follows other diseases, but may occur suddenly. It usually comes on the third or fourth of a series of hot days. The best treatment is preventive.

DR. BRUSH said that by visiting cow pastures one could predict the occurrence of epidemics of cholera infantum in the cities. There are certain weeds cows avoid in cool weather when grass is plenty—lobelia, buttercup, poison ivy, etc. Little clumps are left on the field. But after two or three days of hot weather these clumps disappear, the poisons taken in by the cow are excreted in her milk, and that is one cause of cholera infantum in bottle-fed babies. The treatment is to stop the milk and give chloroform in emulsion with castor oil and gum arabic. It is a stimulant to prevent collapse, a disinfectant and an analgesic. He differed with Dr. Love as to the use of commercial foods. Some of these are largely made with waste products of various industries, as the refuse roe from salmon canneries, whey from cheese factories, etc. One, which had been mentioned, was largely made up of the blood from slaughter houses, whiskey being the preservative.

Now, with such a food we cannot tell whether the animals, from which it came, were healthy or diseased. But if we get meat we can examine it for ourselves, and then make a beef preparation in such a way as we may prefer. We should always be able to prepare, in the patient's house, whatever food is needed, from milk, or from cereals, or starches, or meat.

DR. MEYER, of New York, referred to the confusion of terms, looking upon cholera infantum as a very rare disease. Morphine with atropine was the remedy. He had never found occasion for the use of commercial, artificial foods.

DR. LOVE said he would use commercial foods like drugs with great discretion, and never when other means were available and equally efficacious. They were tools, and he could not always stop to manufacture his tools. If he found a good tool in the shops it was better to buy it and use it properly. Again, we must take homes as we find them. We could not trust home manufactures in every instance. Manufacturers of infant's food were men, and he would be sorry to learn that human nature was so base as to put filthy refuse products on the market for so sacred a purpose as the feeding of infants. No terms were too severe to condemn such action, but he did not believe that all manufacturers were morally torpid.

The Committee on Nominations reported the following nominations for

OFFICERS FOR THE ENSUING YEAR.

President, I. N. Love, of St. Louis,
Secretary, E. F. Brush, of Mt. Vernon, N. Y.,
and they were unanimously elected.

DR. F. E. WAXHAM, of Chicago, forwarded a paper entitled

INTUBATION OF THE LARYNX WITH REPORT OF CASES,

which was read by the Chairman.

Dr. Waxham reported 60 additional cases with 28 recoveries, or 46.66 per cent., which, with cases previously reported, made his record to date 210 cases with 79 recoveries, 32.89 per cent. The cause of the greater success latterly was not unnecessary operation; on the contrary, nine-tenths were done as a last resort, some of the children being moribund. As to medicinal treatment, of 19 cases that had corrosive sublimate before and after intubation, 9 recovered, 47.36 per cent; of 28 cases treated with the same drug only after operation, 14 recovered or 50 per cent., while of 13 cases that had not been given the drug at all, 5 recovered, or 38.46 per cent. The type of disease was not different. The improvement in the method of feeding, namely, having the child drink in the inclined position with the head down was the greatest factor in the increased success. The artificial epiglottis was now unnecessary. Another element was a more watchful care. A frequent cause of death had been detachment of membrane beneath the tube, choking the windpipe. By using a tube with less swelling it was more easily expelled and the membrane would also be coughed out. Large tubes fitting tightly, therefore, are dangerous. No danger was to be apprehended from expulsion of the tube, if the operator or a competent substitute could be summoned quickly to replace it. Partial detachment of membrane would be indicated by hoarse cough, when the tube should be at once removed. The membrane would then be expelled. The operations were all but one for membranous laryngitis. An exceptional case was one of laryngeal stenosis with measles. The patient died.

Age.	Number of Cases.	Number of Recoveries.	Percentage of Recoveries.
Under 2 years	11	3	27.27
Between 2 and 3 years	8	2	25.
" 3 " 4 "	9	4	44.44
" 4 " 5 "	17	8	47.05
" 5 " 6 "	4	3	75.
" 6 " 7 "	3	3	100.
" 7 " 8 "	5	4	80.
" 8 " 9 "	2	1	50.
12 years	1	0	0.
	60	28	46.66

The youngest patient was six months; it died. The cases of recovery under two years were aged fifteen, eighteen, and eighteen months respectively.

DR. GAY, of Boston, said that at the Boston City Hospital the statistics were slightly in favor of the older operation, but the new prevails as being, on the whole,

easier to do. In some cases none have been able to get the tube into the larynx. It requires as much help, as there is as much danger of the patient dying under the hand of the operator as in tracheotomy. 10 cases in 310 of tracheotomy had died from ether, shock, prostration, or hemorrhage. In intubation an equal number of deaths occurred from strangulation and shock. Even if deposited with the utmost care, there was a moment of strangulation with every intubation. If it did not immediately pass off, the tube should be removed and the membrane will be coughed out. By persistently trying to force in a tube which always causes a strangulation life might be lost. When the stenosis was not relieved by the tube, or swallowing was impossible, or the tube constantly coughed up, tracheotomy was indicated in the majority of cases. In 32 cases in which intubation failed and tracheotomy was then done, 3 recovered. The type of disease influenced the result very much. There was no fixed treatment aside from operation. He had used bichloride faithfully for two years. At one time he thought more recovered, but now he said that the facts do not warrant any conclusion. Feeding is very important. In intubation it should be done with the child lying down, and on one side. There was no pathological evidence that the inspiration of food causes death. All know how the tracheal tube became jammed up. The intubation tube did not. It became blocked below but not lined with membrane.

Outside the hospital Dr. Gay did intubation among poor people who could not properly care for the tracheotomy tube. He saw the child as often as he could. A certain number were and would always be lost from inability to find the operator at the time of blocking of the tube or when it was coughed out. On the whole, intubation was the better operation in ordinary cases.

DR. DENNISON, of Colorado, thought it needful to inquire into the effect of annihilation of the function of the larynx in intubation as well as in tracheotomy. Pulmonary complications caused seventy per cent. of the deaths. He had performed intubation twenty-five times with seven recoveries. Nine of the eighteen deaths were due to œdema of the air cells from aspiration of the blood toward the lungs while breathing was suspended. In Colorado they had to breathe five times more in the minute to get sufficient oxygen on account of the lower air pressure (twelve pounds instead of fifteen pounds, as at sea level) and this affected little children remarkably. In his fourteenth case he noticed that the pulse was weak during inspiration and strong during expiration. The blood could not get out of the thorax while the latter was distended with entrance of air impeded. He operated and recovery ensued. Where aspiration of blood has already occurred before operation recovery is almost impossible. Death ensues from œdema in twelve to thirty-six hours; average twenty-six hours. We need to study this question to get the best results from the operation.

DR. BRUSH said that he had found Dr. O'Dwyer modestly at work in the hospital, had asked and obtained permission to publish the results, and had gone enthusiastically into the practice of intubation. His record was twenty-three operations with one recovery, the latter the only one in his own practice. Recently he had intubated an adult, who was relieved but died twelve hours later. It was a mistake to persevere in attempts to put the tube in, when there was great difficulty. It was necessary for the operator to examine the case and refuse to intubate when there was pulmonary œdema, for in such cases no relief is afforded and the operation lost prestige. Even when children died, the parents admitted the relief, and were willing to commend the operation for that reason. He doubted the entrance of food into the lungs. It was the ineffectual cough which set up the irritation, causing pneumonia when there was not an extension of the disease in the throat.

DR. LARRABEE had had experience with tracheotomy only, with twenty-five per cent. of recoveries. No two subjects admitted of such equal balance of opinion. If the dangers of tracheotomy were a Scylla, those of intubation were a Charybdis. It was said that intubation was less difficult. This arose from personal experience. Certain men possessed or acquired a technical facility, like Tait in laparotomy or Waxham in intubation; but others could not attain the same brilliant results. To him intubation was far the more difficult operation. It was more popular with families because it was bloodless. Operations were reported indiscriminately whether for croup or diphtheria. But a distinction should be made. Membranous croup is a local disease—an exudation without sepsis. Diphtheria is a systemic infection. In croup we operate and cure; in diphtheria we relieve but one symptom and have the disease still to fight. Tracheotomy gives the better prospect because it interferes less with alimentation. It did not require cessation of medical treatment, of the iron, internally, externally, eternally, on which he depended, with food and whiskey, for the cure. The pressure of the membrane still left below the tube is unfavorable. For infants under two years, and in croup, intubation held first place; but tracheotomy in older children with diphtheria. As to the blocking of the tracheal tube by covering it with a sponge moistened with hot water, or by proper arrangement to keep up steaming, this could be avoided. Too much importance was attached to pneumonia. He was in the habit of medicating through the trachea, pouring down a drachm of a solution containing chlorinated soda, and found the cough it excited beneficial in causing expulsion of membrane.

The condition alluded to by Dr. Dennison was present, but not due to either intubation or tracheotomy. It was found when no operation had been performed. Tracheotomists were familiar with the venous turgescence caused by the non-return of venous blood, and how often timid operators had suffered the child to die by trying to arrest hemorrhage from such distended veins, when by opening the trachea the condition could be at once relieved.

DR. HENRY D. CHAPIN, of New York, then read a paper on

PSEUDO-MEMBRANOUS RHINITIS.

Can there be a croupous inflammation of the nasal mucous membrane entirely apart from a manifestation of diphtheria he asked. Schwalbe, in 1871, reported the case of a boy, five weeks old; and Hartmann, in 1887, reported six cases in children from three to seven years, in which casts of the nasal passages were expelled or removed, consisting of pseudo-membrane microscopically indistinguishable from diphtheria. Other reported cases were alluded to, which occurred both in children and adults, and two original cases were added to the list.

Dr. Chapin's patients were sisters, aged two and three years respectively. The latter was first attacked, and presented the most marked manifestations. Two weeks before coming under observation, a discharge from the nose began, and was accompanied by coughing and sneezing. General condition was good. There was no fever. The nose was packed with fibrous material, the throat only congested. For the next few days shreds of membrane were thrown off from the nose, and on several occasions large masses were detached with forceps. Bleeding followed. Temperature was but slightly elevated. There was so little disturbance, except from nasal stenosis, that the parents would not confine the children to bed, and they played around as usual. The urine was never albuminous. In view of the entire absence of sepsis while the nose was packed with membrane, which, if infectious, would soon have poisoned the whole system, the author concluded that the disease was not diphtheria, notwithstanding that the microscopic examination showed no difference between the pseudo-membrane and that of diphtheria.

DR. S. SOLIS-COHEN, of Philadelphia, referred to the great variety of forms of pseudo-membranous inflammation of the air-passages, and to pseudo-membranous enteritis, and thought the peculiar response of mucous membranes to different sources of irritation sufficient to explain Dr. Chapin's and other cases, without any necessity for calling in the aid of a specific poison.

DR. COCHRAN, of Massachusetts, reported cases of extension of diphtheritic casts of the nasal chambers. Diphtheria might be localized in the nose, or extend to the throat, and death or recovery might take place in either case.

DR. LARRABEE thought the matter of identity of all pseudo-membranous inflammations could not be settled by mere microscopic identity of the product. The clinical history was equally important, and herein great differences existed. Any irritation might produce it, or a specific poison might give rise to local and general infection. In the one case the patient got well with removal of the membrane, in the other it continued to form again and again, even on scratches of the body. Croup was not epidemic, it came with the vicissitudes of weather and changes of temperature. Diphtheria comes as infection, and spreads from child to child, and from house to house.

DR. CHAPIN said that Dr. Cochran's cases were quite different from his. Nasal diphtheria was an infectious disease, and when matter filled the nose without causing infection, we could argue that it was not of an infectious nature.

DR. C. R. EARLEY, of Pennsylvania, read a paper on

SCARLATINA.

He doubted its contagious character, and urged sanitary precautions as prophylactic means. He denied its identity with diphtheria, and referred *in extenso* to the various sequelæ and their treatment, it being important to recognize the cause. The treatment of cases of scarlet fever varied with the locality and the season. In mild cases very little interference was needed. He gave ipecac as an emetic, with caution, and administered cooling drinks freely. In the anginose form he used chlorate of potash, oil of turpentine, quinine, carbonate of ammonium, with free use of cold water and ice to the throat. As a gargle, chlorate of potassium, capsicum, and chloride of sodium, or sulphate of zinc, creasote, and myrrh; or chlorate of potassium, chloride of sodium, bichloride of sodium, and gum acacia. To prevent gangrene he used ergotine with camphor, iodine, and glycerine. Several cases were given in support of the various propositions advanced.

THIRD DAY—THURSDAY, JUNE 27TH.

DR. S. P. DEAFHAFE, of Potsdam, O., read a paper on

POLIOMYELITIS ANTERIOR ACUTA.

He had seen five cases. He considered it an acute inflammatory affection of unknown origin. Cold and dentition are doubtful causes. Nothing indubitable is known of a specific microbe. We cannot trace heredity. Onset with fever may be abrupt. One lower extremity is most frequently affected, the temperature of the part becoming subnormal. Diagnosis and treatment were discussed at length.

DR. KING, of Chicago, had seen three cases in adults, in whom it was possible to obtain symptoms not seen in children. The bladder was always paralyzed, but recovery was prompt. Tactile sensation was unaltered. In early stages electrical treatment did harm. When but one extremity was affected the lesion was upon the opposite side of the cord, yet the knee-jerk of the apparently sound side would be absent.

THE CHAIRMAN spoke of the difficulties in diagnosis, especially with regard to rheumatism. He had formed a low estimate of the therapeutic value of electricity.

DR. I. N. LOVE, of St. Louis, read a paper on

ONE YEAR OF ACETANILIDE IN PÆDIATRIC PRACTICE.

He considered acetanilide superior to all of the carbolic acid series. He believed it better to use the name given in the title in preference to that of "antifebrin." He considered it three times more effective than antipyrin and less depressing. If it does diminish the red blood-cells, it does so slowly after long administration. Depressing effects came from poor makes of the drug. He agreed with Widowitz in his view of its safe and steady action with children. He did not believe that the disagreeable cyanosis was of especial importance, and it could be obviated by combining with alcohol. He made mention of the use of the drug in scarlet fever, measles, and congestive fevers. The author spoke of the treatment of fifty cases of whooping-cough, and thought it a valuable remedy. He also mentioned its use in convulsions and chorea. In conclusion, the writer stated that acetanilide, carefully guarded and properly used, is a safe and reliable remedy in the diseases of infancy and childhood. It is preferable to antipyrin, because it does not cause so much depression and its effects last longer. The cyanosis is not dangerous, though it is a disagreeable feature. It is of value in controlling temperature in various fevers caused by the typhoid germ, malaria, or the exanthemata. It serves almost as a specific in whooping-cough by mitigating the discomforts and controlling paroxysms. He was opposed to the sale of these carbolic drugs over the counter.

DR. DIXON, of Kentucky, had given it, followed by quinine, in malarial fevers. In whooping-cough he preferred antipyrin.

DR. HILL, of New Hampshire, had seen good effects from acetanilide in asthma.

DR. KING, of Chicago, related a case of cerebral tumor, in which large doses had been given—twenty grains at one time—for relief of pain.

DR. WATSON, of Jersey City, thought it better not to do anything in self-limited fevers.

DR. ATKINSON, of Baltimore, had not seen the impure drug. He did not think it could modify the fever process, though it could contribute to the comfort of the patient.

DR. OSLER, of Baltimore, had given acetanilide in the cold stage of fever, but he believed that it was useless.

DR. LOVE, in closing, said that cyanosis was best treated by giving alcohol at the same time with the drug.

AMERICAN NEUROLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Long Branch, N. J., June 26 and 27, 1889.

JUNE 26TH.—MORNING SESSION.

THE PRESIDENT, E. C. SEGUIN, M.D., called the Association to order.

DR. MORTON PRINCE, of Boston, presented a paper on

MALARIA AS A CAUSE OF DEGENERATIVE DISEASE OF THE SPINAL CORD.

He spoke of the frequency of tabes and other spinal degenerations in cases which also presented a history of malaria. The first case he had recorded was one of locomotor ataxia with typical tabetic crises before each malarial chill. Another had gastric crisis regularly once monthly, and another crisis beginning with rigor and followed by diarrhœa, this occurring every three weeks. The latter case had been diagnosticated as malaria by the family physician. Altogether the author reported in detail six cases, showing the coexistence of tabes with malaria; and six cases in which the malarial history was associated with disseminated sclerosis. Besides these he had notes of three other cases of multiple sclerosis, two of locomotor ataxia, and one of lateral sclerosis with a similar relation. Generally the malarial poison was present in the system previous to the development of spinal symptoms. He pointed out coincidences in the course of syphilis and malaria, such as the slowness of action of the poison and amenability to treatment; and also called attention to the relation of the syphilitic virus to tabes. He had found but little to support his etiological theory in literature. Erb, following Schulze, had stated that tabes may occur as a sequel to intermittent fever. Tuczek had proven that tabes could be caused by the ergot parasite. Many nervous disorders are undoubtedly due to malaria, such as neuralgias, anæsthesias, severe psychoses, etc. He alluded to the deposition of pigment in the brain in some cases of pernicious malaria. It would be very important for many army pensioners if it could be definitely determined that tabes and sclerosis might be sequelæ of malaria.

DR. N. F. BRILL said that his attention had never before been directed to the possibility of such a relation, but he thought the details presented were rather too meagre for an absolutely correct decision to be made in the matter. As neuritis and malaria were frequently associated, possibly some of these spinal cases might be coincident in the same manner. Both malarial and cord disorders are very common.

DR. L. C. GRAY saw no reason why the malarial poison should not cause spinal diseases. We do not yet know the exact character of the poison. But there is a sort of periodicity in many spinal and cerebral disorders, as well as in peripheral nervous affections, which is often as marked as that of fever and ague. He had noticed this particularly in intracranial syphilis. Some of these neuropathies were even relieved by quinine, as he had observed in cases of tabes. When we speak of latent malaria and rest our diagnosis merely upon periodicity, there is danger of error. If Laveran and Councilman were right in their discovery of the malarial germ, this should be looked for in such cases as the author had described, in order to corroborate with certainty the diagnosis. Improvement or recovery under the use of quinine was no criterion.

DR. E. C. SPITZKA saw nothing in the nature of the case to forbid an etiological association between malaria and cord disorders, but he agreed with the preceding speakers that sufficient proof of such relation had not been adduced. To show an etiological significance, it was necessary to present absolute and intrinsic proof of it. If it could be shown that, as in syphilis, there were at the time of the malarial attack nervous symptoms, it would be a different matter. In the secondary fever of syphilis there was absence of the knee-jerk. Most nervous symptoms in malaria were of a neuralgic character. The anæsthesias differ from those of tabes. It had been found that pigmentary thrombosis or embolism were the most frequent causes of serious nervous disturbances in malaria. He believed, however, that, like any other cachexia, antecedent malaria might predispose to spinal affections. He had observed a case of paretic dementia of the tabetic type which was probably influenced etiologically by severe malaria.

DR. H. M. LYMAN, of Chicago, could recall but two cases where it had been intimated to him that the origin of tabes had been malarial. In one he traced the actual cause to a subacute spinal meningitis coming on after exposure to wet and cold. The other case instead of being true tabes had proved to be a rheumatic neuritis. He had in his experience seen nothing to support the idea of a malarial etiology in tabes. A complete and perfect history together with a microscopical examination of the blood should be required for an indisputable diagnosis of malaria.

THE PRESIDENT could not recall a single case of tabes or multiple sclerosis which presented any relation to malaria.

DR. PRINCE thought there could be no question as to the correctness of diagnosis as regarded the nervous symptoms in his cases, and as to the antecedent malaria; all of his cases were men who had been in army service, and he had documentary proof of their having suffered from that poison in the shape of government records. The really doubtful question was whether the malarial poison still existed in the system at the time of the development of the spinal disorders. In some of them there was evidence of its persistence in the shape of typical malarial rigor and pyrexia. He did not consider his etiological explanation decisive, but merely suggestive.

DR. SPITZKA thought that there were many cases of nervous disease owing their origin to exposure during the

war which were contemptuously rejected by the Pension Bureau. It seemed to him that the Association ought to call the attention of the government to the great injustice that might be done.

THE PRESIDENT, although once an army surgeon, and, therefore, prejudiced in favor of the soldiers, had been on the contrary struck by the vast number of fraudulent nervous cases which were awarded pensions.

ELECTIONS AND RESIGNATIONS.

Drs. W. M. Leszynski, of New York, C. Eugene Riggs, of St. Paul, N. S. Upson, of Cleveland, H. A. Hare, and J. P. C. Griffith, of Philadelphia, were then elected to active membership; and Mr. Victor Horsley and Dr. David Ferrier, of London, were elected to honorary membership. The resignation of Dr. A. D. Rockwell, of New York, was accepted.

AFTERNOON SESSION.

DR. B. SACHS, of New York, reported a case of

NUCLEAR OPHTHALMOPLEGIA WITH POLIOMYELITIS (POLIOENCEPHALITIS SUPERIOR AND POLIOMYELITIS).

The relation between these two forms of disease which had been suspected by Hutchinson, Mauthner, and others was proven by this case. But one other was on record, that of Seeligmuller. The history of the patient was briefly that a ptosis of the right eye gradually developed, followed after a few months by ptosis of the left eye also, and soon after a paresis of all the external ocular muscles of both eyes appeared. This resulted in almost absolute fixation of the right eye, but left a slight inward and upward movement of the left. There was immobility of the left pupil to light, but not to accommodation. The right could not be examined because of corneal opacity. During the development of this nuclear ophthalmoplegia, a subacute poliomyelitis affecting the entire right leg supervened. There was now marked atrophy of the entire right leg. The knee-jerk was lost on both sides. There were no sensory disturbances. There were no tabetic symptoms, and the patient's condition was normal in all other respects. This case proved that the affection of the nuclei in the floor of the third and fourth ventricles was due to the same pathological process which gives rise to poliomyelitis when it affects the gray matter of the cord.

DR. SPITZKA said the report of the case had been so complete and there being but one other such case on record, it did not admit of either criticism or comparison. He referred to Thomsen's case of unilateral nuclear paralysis, where there was a gummatous infiltration on both sides, and the explanation of which was to him quite impossible.

DR. SACHS asked if fibres could be traced up through the ciliary nuclei.

DR. SPITZKA answered in the affirmative and made blackboard drawings illustrative of their course.

DR. J. J. PUTNAM, of Boston, then presented, through Dr. W. N. Bullard, a skull which was a remarkable example of

HYPEROSTOSIS CRANII.

The case had been reported to the Association two years ago. The patient was a woman, thirty-one years old at death. The chief symptoms were headache, broadening of the head, dropping out of the teeth, loss of hearing, vertigo, beginning gradually some years ago. There was extreme exophthalmos. There were no retinal changes. Extensive pachymeningitis was discovered at the autopsy. There was thinning and atrophy in parts of the skull. The orbital cavities were greatly diminished in size. Virchow considered hyperostosis cranii due to inflammatory changes. In this case probably the inflammation originated at the ear. Dr. Putnam had a patient now with similar symptoms, in whom the exostoses were first noticed in boyhood, and he desired the opinion of members as to the justifiability of removal of certain exostoses for the relief of pain. Dr. Bullard himself thought it might be difficult to determine which of the exostoses produced the pain. Some of the exostoses were very diffuse and the operation might have to be extensive.

THE PRESIDENT believed that the pain would be more apt to originate from basal lesions, possibly dural inflammation about the issuing nerves. The jaw in this case was interesting because of its senile conformation and angle, despite the youth of the patient.

DR. W. M. LESZYNSKY, of New York, read a paper entitled

SPONTANEOUS DEGENERATIVE NEURITIS OF THE BRACHIAL PLEXUS.

The patient was a laborer, aged thirty-eight. He first had pain in the left shoulder, shooting down the arm, which was ascribed to exposure to wet. There was then no involvement of the shoulder-joint and the motility of the arm was unimpaired. All the muscles reacted well to faradism, except the deltoid, which was atrophied. There was no sensory disturbance, but there was pain on pressure. Gradually other muscles became paralyzed, until a large number of the arm muscles were useless. The paralysis was accompanied by pain so excruciating that the patient could not sleep at night. A feeling of numbness extended from the shoulder down the arm over the radial distribution, and a gradual anæsthesia and analgesia supervened throughout the same area. The faradic excitability disappeared, and there was galvanic hyper-excitability. Then he began gradually to improve, and will ultimately recover. The case was remarkable in its severity, in its idiopathic origin, and in the escape of the median and ulnar nerves from the inflammatory process. Not more than one case had to his knowledge been found in literature.

DR. PRINCE thought it would be difficult in the early stages of such a case to distinguish it from progressive muscular atrophy of the shoulder type. He recalled a case of his own in which there was every reason for considering it to be neuritis. It began with cramps such as are observed in writer's cramp, and it was several years before other symptoms proved the case to be one of progressive muscular atrophy. The most common cause in such cases as the author's was traumatic arthritis, but generally the results are slight.

DR. W. R. BIRDSALL had seen this case before, and was impressed with the idea that it might be a periarthritic affection, but the author's careful study of the case seemed to exclude this. He recollected that at that time there was some ankylosis of the shoulder-joint in the case.

THE PRESIDENT considered the study of the differing

resistances in the healthy and diseased arm, made by the author, interesting, and asked if any member had had experience in such measurements.

DR. GRAY had noticed much variation in resistance in many of his patients from day to day.

DR. STARR had measured the resistance in Basedow's disease, and had found it to vary within a thousand ohms in the same cases from time to time. Electricity was diffused through muscular better than any other tissue. The chief resistance was in the skin. Probably but little of the current permeated nerves, and hence alterations of nervous tissue would not have much to do with the variations mentioned by the author.

DR. G. M. HAMMOND stated that it was well known that the resistance differs from day to day in animals. He asked if in this case it had been measured for a number of times, and was answered that eight trials had been made.

DR. BIRDSALL thought the question of resistance had little to do with our study of disease. It was easy to explain the numerous variations by the wide differences in vascularity and moisture of the tissues at different times. It might be due, in this case, to paralysis affecting the physical condition of the tissues. The saturation of the epidermis by perspiration would explain the variations mentioned by Dr. Gray. He had made measurements in cases of Basedow's disease some time ago, and believed the diminished resistance found, to be due to the moisture of the skin. It could not depend on dynamic conditions in the nervous system, but was purely a matter of physics about which there was no great mystery.

DR. GRAY said the explanation by moisture of the skin was not applicable in his cases. The differences which he had observed were not owing to the humidity of the atmosphere, although atmospheric conditions might possibly induce dynamic changes in the body.

DR. SACHS pointed out that on one day the author's case showed 580 ohms increase on the diseased side, and on another day 1170 ohms increase on the sound side. Such variations evidently had little to do with the pathological process in the patient. Eulenberg had measured the resistances in cases of paralysis agitans and of Basedow's disease, but without any practical results. As such measurements were very complex they required exceedingly great care.

DR. PRINCE objected to the use of the palm of the hand for precise experimentation, owing to the great variability of the thickness of the skin, and consequently of the resistance. He thought the forearm ought to be used.

DR. LESZYNSKY had not brought forward the question of resistance, in this case, as a diagnostic symptom. It was increased in the affected arm at every examination. With subsidence of the symptoms the resistance gradually diminished, but there was a difference between the sound and morbid side throughout the disease. As to the question of moisture, there was excessive perspiration upon the paralyzed arm, while the normal arm was dry, in spite of which the resistance was greater upon the former. He thought it better to place the electrode upon the wrist than in the hand. There was no antecedent traumatism in the case; the roughening of the shoulder-joint was the result of the paralysis.

DR. M. ALLEN STARR, of New York, then presented a specimen of an

INTERPEDUNCULAR MYXOSARCOMA.

It lay in the middle cranial fossa in the median line, between the crura cerebri, which it separated. It extended into the lateral ventricles, separating widely the caudate nuclei and optic thalami. The patient was a male, aged twenty-one months at death. At the age of thirteen months, in October last, a lateral nystagmus had been observed in both eyes, varying from time to time. Drs. Knapp and Roosa found a slight pallor of the optic disks, which they considered normal. Later, exophthalmos developed, gradually increasing until death. Convergence of the eyes was impossible, although no paralysis of a cranial nerve was discoverable. The reflexes of the iris were lost. Toward the middle of April, this year, the child became unable to walk. The knee-jerks were exaggerated; there was ankle-clonus and typical spastic rigidity. Finally, the back could not be held up, and later the head could not be supported. There was gradual emaciation. There was no apparent headache. From time to time the scalp was congested. About this time the pallor of the optic disks indicated atrophy. There was no blindness, no hemiopia, no aphasia, as far as could be ascertained in so young a child. Toward the middle of May ataxia of the arms developed, but without loss of muscular power. June 8th vomiting and Cheyne-Stokes respiration came on, and the child died in nine hours. The diagnosis of tumor had been made, but the question of localization was of great interest. Nystagmus was not a localizable symptom, but had been found most frequently in lesions of the corpora quadrigemina. The exophthalmos indicated intra-cranial pressure, the gait disturbance led one to think of a cerebellar lesion, while the ataxia of the hands pointed to a basilar trouble affecting, symmetrically, either the pons or the medulla. The question of operative interference had been considered, but he had opposed that proposition because of the difficulty of localizing the tumor. The autopsy proved that the pons was not even pressed upon, and that the cerebellum was normal. There were twenty ounces of fluid in the ventricles. He would ask if there was any localizing value in nystagmus or exophthalmos, and what was the probable cause of the ataxia?

THE PRESIDENT, in referring to the question of ataxia, recalled a case of remarkable bilateral ataxia with optic atrophy, where a large interpeduncular tumor was found between the crura. He thought such ataxia was to be accounted for by pressure upon the motor tracts or motor nuclei. To him the most puzzling feature of Dr. Starr's case was the absence of blindness. As to the nystagmus, it had as yet, in his opinion, no localizing value. He had seen two cases with lesions of the quadrigeminal bodies, but without nystagmus.

DR. LESZYNSKY said the child may have had only central vision, which might explain the presence of nystagmus, but Dr. Starr answered that the visual fields were normal.

DR. SACHS was reminded of Meynert's case of tumor in both optic thalami, with ataxia similar to that of Dr. Starr's case. He thought the thalami might have been pressed upon in the latter, but still was not sure that would cause the ataxia. He considered nystagmus very frequent in many central disorders of children.

DR. H. M. LYMAN referred to a case he had seen re-

cently of defective cerebral development in a child where there was also nystagmus.

DR. GRAY asked how a diagnosis of intra-cranial tumor had been made so early in this case, and was answered that the diagnosis had not been made until all the symptoms described had made their appearance.

DR. HAMMOND thought ataxia depended upon injury to the optic thalami or corpora striata, and referred to a case of Weir Mitchell's, in which there was a remarkable unilateral ataxia with a lesion of the optic thalamus and corpus striatum upon the opposite side.

DR. LESZYNSKY saw a child several years ago with a well-marked nystagmus, which disappeared in the course of time. There was no discoverable cause.

(To be continued.)

CONGRESS OF THE GERMAN SOCIETY OF SURGERY.

Eighteenth Annual Session.
Held at Berlin April 24th to 27th, 1889.

(Concluded from vol. liv. page 695.)

DR. PIETRZIKOWSKI, of Prague, in a paper on

PNEUMONIAS CONSECUTIVE TO STRANGULATED HERNIA.

Comparatively often do we observe pneumonia as a result of inflammation of the peritoneum, and in particular after kelotomy for strangulated hernia. In old people one might think of hypostatic pneumonia, or of a pneumonia due to the penetration of vomited matter into the air-passages; but in another series of facts these two suppositions are not admissible, especially when we have to deal with strong and powerful young men. Gussenbauer thought that these pneumonias were due to partial emboli which started from thrombosed intestinal blood-vessels. If those emboli contain no microörganisms, a simple inflammation is produced which is rapidly cured; but if they are derived from a strangulated loop, they determine deep lesions which end in lobar or lobular pneumonia. If we look over the hospital records we find that this pneumonia is produced in 8 per cent of the cases of operation. But if patients are carefully examined we find light pulmonary manifestations in 30 and even in 50 per cent. of such patients. In the majority of cases the affection is only a simple infarct, and the pulmonary signs disappear in from eight to ten days; in other cases, however, the disease takes the form of pneumonia or pleurisy. Gussenbauer's theory is sustained by this observation, that the pulmonary phenomena come on especially when a strangulation has lasted a very short time. In such cases the clots have not had time to adhere to the parietes. On the contrary, pneumonias are very rare when the strangulated loop has become gangrenous and the circulation has been interfered with. In such cases we must make an abdominal fistula, and in such cases the pneumonia is much more rare than after simple kelotomy. Jaundice is quite a frequent symptom as a result of the reduction of a strangulated hernia; it can also be explained by emboli which have been arrested in the liver; this fact is often confirmed by the post-mortem.

As a result of his experiments on dogs, in which he made artificial strangulated hernias, he found in ten animals on which the operation succeeded, parenchymatous alterations of the lungs and sometimes of the liver, due to emboli enfarcts. In a few cases he was able to demonstrate the formation of a thrombus in the intestinal vessels. The thrombus reaches the lung by the portal venous system and by the inferior vena cava.

DR. THIEM, of Kottbus, had observed on two occasions pulmonary infarcts after the reduction of a hernia; still he did not think it was a special complication, for he had observed the same pulmonary accidents after the total extirpation of the gall-bladder and of the uterus.

PROF. KÜMMEL, of Hamburg, then read a paper on

OPERATIVE TREATMENT OF HYPERTROPHY OF THE PROSTATE GLAND.

He had performed on six patients a partial extirpation of the hypertrophied prostate gland. His cases were very grave, as they had resisted all other methods of treatment. There was fever, bronchitis, and considerable vesicular dilatation. In such cases the operation is indicated, while it is the contrary when the kidneys are seriously involved or when there is a complete paralysis of the bladder. In this last case the operation is useless, for even after the suppression of the obstacle, spontaneous micturition cannot be reëstablished. To extirpate the prostate gland he performs superior cystotomy; the bladder is very carefully washed out, and he then destroys, by the aid of the thermo-cautery, not only the median lobe, but also all the parts of the gland which project into the bladder. He then sutures the bladder, and allows Nélaton's sound to remain in it. Out of six patients, one died from collapse, in another the operative result was negative, four are cured and can urinate spontaneously.

PROF. SOCIN, of Bâle, said that most of the symptoms from which prostatic patients suffer depend, not upon the hypertrophy of the prostate gland, but upon a concomitant vesical catarrh. We know that even very considerable hypertrophies of the prostate gland are sometimes followed by negative symptoms, while very small hypertrophies cause very considerable suffering. All depends on the state of the bladder. If one succeeds in curing the cystitis, most of the troubles disappear, even without interference. The good results which sometimes follow extirpation of the prostate gland, are due probably more to the washing out of the bladder and to the sound left in position—that is, to the treatment of the cystitis—than to the operation itself. The cystitis is the first enemy to combat in the treatment of prostatic patients.

PROF. THIERSCH agreed on every point with Dr. Socin; he, moreover, called attention to the fact that the median lobe of the prostate is sometimes very useful to certain patients, in whom it prevents the outflow of urine by closing the entrance of the urethra; hence the extirpation of the middle lobe can make the patient worse instead of better.

PROF. MIKULICZ then spoke of

TURPENTINE AS AN EXCITANT FOR THE PRODUCTION OF OSSEOUS TISSUE.

He exhibited a patient in whom the whole tibia had become necrosed. Repair had taken place, except for a distance of about two inches, where there existed a large fibrous cicatricial cord containing periosteal remains. He thought of stimulating the vitality of the periosteum and making it reproduce bone in sufficient quantity to remedy the deformity of the limb. To do

this he made in the persistent fibrous cord several longitudinal sections, between the lips of which he interposed turpentined gauze, which was changed every ten days, by this means he obtained a comparatively large bone.

PROF. V. BERGMANN said he had not obtained any good results from employing turpentine, as just recommended.

DR. HAHN, in a similar case to that of Prof. Mikulicz, where the fibula had been saved and two inches of the tibia were absent, implanted the fibula into the tibia.

PISTOL-SHOT WOUND OF THE ABDOMEN.

DR. BRAMANN presented a young man who received a pistol-shot in the left epigastric region. Three hours after the wound he could detect the presence of liquid in the abdominal cavity. The man was seized with collapse. Laparotomy was then performed; the ball had perforated a loop of small intestine and wounded a large artery, which had produced quite a hemorrhage. The artery was ligated. The points of entrance and exit of the ball in the intestine were found absolutely closed by the intestinal mucous membrane; even by pressing on the perforated loop no gas or intestinal contents could be made to come out. No sutures were made; no washing of the abdominal cavity; the blood clots alone were removed. The patient was cured after the first dressing. He thought it unnecessary to use the American method to know if the intestine has or has not been wounded. The method consists in introducing hydrogen gas by the rectum. If the intestine is perforated the hydrogen will come out by this opening into the peritoneal cavity, which it again leaves to come out by the wound which exists in the abdomen to reach the exterior. If this takes place, a lighted match placed at the point of entrance of the ball will light a jet of hydrogen gas, which will demonstrate the perforation.

PROF. SOCIN said that according to experiments made by a French surgeon on dogs which were fasting, the state of the stomach at the time the wound has been inflicted is of the highest importance. It is only when the intestine is empty that the mucous membrane will be able to reverse itself and close the points of entrance and exit of the ball.

Adjourned.

NEWS ITEMS.

Free Libraries and Contagion.—It implies no real disparagement of the great advantages connected with public libraries that books issued by them are occasionally to be found in houses where infectious disease is prevalent. The possibility of risk thus incurred is inevitable unless the system of book-lending throughout the country is to be done away with. A few days ago it was announced in the daily press that four books from a free library had been discovered in a house where one child had fever; and the case, as we know from recent experience, is not singular. Instances of the same kind must have occurred since the earliest period at which books were placed in circulation. Some persons, perhaps, under the guidance of a timid over-zeal for health, might condemn the free library itself as a virtual source of contamination. In our opinion this would be to caricature precaution. With almost equal reason might we forbid to infected households all necessary intercourse with tradesmen who supply their daily wants. The real remedy is not to be found in any superfine theorizing, but in more practical measures. These must include the compulsory notification to librarians of infectious disease among the families of their readers, the thorough disinfection or destruction of books already exposed to the taint of disease, and the temporary restriction of any further issue to the homes of infected persons.—*Lancet*, May 4, 1889.

The British and American Pint.—According to the *British Med. Journal*, the attention of the Midland Counties Chemical Association was lately called to the indeterminate character of the pint measure in use among pharmacists, or, as it was put, the doubt as to the meaning of the abbreviation *Oss.* Our contemporary remarks, however, that all ambiguity ought to have been cleared up by the General Medical Council's distinct statement that twenty fluidounces constitute a pint. Inasmuch as our American apothecaries' pint consists of only sixteen fluidounces, it will be well for prescribers and dispensers to bear the disparity in mind.—*New York Med. Journal*, May 11, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 25 TO JULY 1, 1889.

CORSON, J. K., *Major and Surgeon.*—The leave of absence for one month, granted by Par. 2, S. O. 65, *c. s.*, Department of the Columbia, is extended one month.—Par. 1, *S. O. 45, Headquarters Division of the Pacific*, June 24, 1889.

CHAPIN, A. R., *Captain and Assistant Surgeon.*—Is granted leave of absence for twenty-five days, to commence on or about July 2, 1889.—Par. 6, *S. O. 145, Division of the Atlantic*, June 27, 1889,

By direction of the Secretary of War, EZRA WOODRUFF, *Major and Surgeon*, is relieved from temporary duty at Fort Monroe, Virginia, and will report in person to the commanding officer at Fort Hamilton, New York, for duty at that station.—Par. 5, *S. O. 146, A. G. O.*, June 25, 1889.

By direction of the Secretary of War, the extension of leave of absence granted WALTER W. R. FISHER, *Captain and Assistant Surgeon*, in S. O. 41, June 12, 1889, Division of the Pacific, is still further extended fifteen days.—Par. 8, *S. O. 146, A. G. O., Washington*, June 25, 1889.

HOFF, JOHN VAN R., *Captain and Assistant Surgeon.*—Is relieved from duty at Fort Reno, Indian Territory, and ordered to Fort Riley, Kansas.—Par. 6, *S. O. 145, A. G. O., Washington, D. C.*, June 24, 1889.

BACHE, DALLAS, *Major and Surgeon.*—Is relieved from duty at Fort Riley, Kansas, and ordered to report to the commanding general Department of the Platte, for duty as Medical Director of that Department.—Par. 6, *S. O. 145, A. G. O., Washington, D. C.*, June 24, 1889.

By direction of the Secretary of War, leave of absence for two months is granted GEORGE T. BEALE, *Captain and Medical Storekeeper.*—Par. 8, *S. O. 148, A. G. O.*, June 27, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING JUNE 29, 1889.

SIEGFRIED, C. A., *Surgeon.*—Detached from the U. S. S. "Quinnebaug," and wait orders.

CURTIS, *Passed Assistant Surgeon.*—Detached from the U. S. S. "Quinnebaug," and wait orders.

SMITH, GEORGE T., *Assistant Surgeon* —Ordered to the Army and Navy Hospital, Hot Springs, Arkansas.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, JUNE 13, 1889. NO. 2.

ORIGINAL LECTURES.

CONSIDERATIONS CONCERNING SOME EXTERNAL SOURCES OF INFECTION IN THEIR BEARING ON PREVENTIVE MEDICINE.

The Address in State Medicine delivered before the American Medical Association at Newport on June 28, 1889.

BY WILLIAM H. WELCH, M.D.,

PROFESSOR OF PATHOLOGY IN JOHNS HOPKINS UNIVERSITY, BALTIMORE.

No department of medicine has been cultivated in recent years with such zeal and with such fruitful results as that relating to the causes of infectious diseases. The most important of these results for preventive medicine and for the welfare of mankind is the knowledge that a large proportion of the causes of sickness and death are removable.

It is evident that efforts to preserve health will be most intelligently and effectually applied when they are based upon an accurate and full knowledge of the agencies which cause disease. Public and private hygiene, however, can not and, fortunately, has not waited for the full light of that day, whose dawn has only begun to appear, when we shall have a clear insight into the causation of preventable diseases. Cleanliness and comfort demand that means shall be taken to render pure the ground on which we live, the air which we breathe, and the water and food with which we are supplied, and we must meet these needs without waiting to learn just what relation infectious agents bear to the earth, air, water, and food.

It is a fortunate circumstance that modern sanitation has been controlled so largely by the belief in the dependence of endemic and epidemic diseases upon organic impurities in the soil and in the water. Incomplete and even erroneous in many respects as are the views which have prevailed concerning the origin and spread of epidemic diseases by the decomposition of organic substances, the sanitary measures which have been directed toward the removal of filth have achieved great conquests in limiting the development and extension of many infectious diseases. The benefits which one Commonwealth of this country has derived from the intelligent employment of public sanitary measures were clearly and forcibly presented before this Association last year by Dr. Walcott, in his admirable address in State Medicine.

While nothing should be said or need be said to lessen the importance of cleanliness for public health, it is important to bear in mind that hygienic cleanliness and æsthetic cleanliness are not identical. In water which meets the most severe chemical tests of purity, typhoid bacilli have been found. On the other hand, the air in the Berlin sewers, which certainly does not meet the most modest demands of æsthetic cleanliness, has been found to be nearly or quite free from bacteria.

It needs only to be stated to be generally admitted that the scientific basis of preventive medicine must be the accurate knowledge of the causative agents of preventable diseases, a knowledge which can be derived only from a careful study of all the properties of these agents, the modes of their reception and of their elimination by the body, the circumstances which favor and those which retard or prevent their development and spread, their behavior in the various substances which surround us or which we take into our bodies, and the sources of infection, not only those which laboratory experiments show to be possible, but those which are actually operative.

So long as we were unacquainted with the living organisms causing infection, the means at our disposal for studying the etiology of infectious diseases were limited to the observation of all the circumstances which we could determine regarding the origin and spread of these diseases. We could only infer what might be the properties of the infectious agents from the study of phenomena often obscure and difficult of interpretation. Chiefly by this method of investigation the science of epidemiology has been built up. It has established facts and laws no less of practical than of scientific importance. But it has left unsolved many problems and has filled gaps with speculations. Admitted epidemiological facts are often open to various interpretations.

We are evidently at a great advantage when we can study the epidemiological facts with a knowledge of the substances which actually cause infection, and this we are now enabled to do for a limited number of the infectious diseases. This new method of research, which thus far has been mainly bacteriological, has aided us not so much by simplifying the problems of etiology, which still remain complicated enough, as by affording greater accuracy to the results.

It is my aim in this address to consider some results of the modern studies of pathogenic microörganisms in their bearing upon preventive medicine, more particularly upon the sources of infection. It is, of course, impossible within the limits of the address to attempt a complete survey of this important field. Time will permit the presentation of only some of the salient points.

Infectious diseases are those which are caused by the multiplication within the body of pathogenic microorganisms.

It has always been recognized that some infectious diseases, such as the exanthematous fevers, are conveyed directly from the sick to the healthy. It is not disputed that in these evidently contagious diseases the infectious germ is discharged from the body in a state capable at once of giving rise to infection.

In a second group of infectious diseases, of which malaria is the type, the infected individual neither trans-

mits the disease to another person, nor, so far as we know, is capable of infecting a locality. Here there is reason to believe that the infectious germ is not thrown off in a living state from the body, but is destroyed within the body. In this group the origin of infection under natural conditions is always outside of the body.

In a third group there is still dispute whether the disease can be transmitted directly from person to person, but all are agreed that the infected individual can infect a locality. It is especially fortunate that the bacteria which cause cholera and typhoid fever, the two most important representatives of this group of so-called miasmatic-contagious diseases, have been discovered and isolated in pure culture. These are the diseases about whose origin and epidemic extension there has been the greatest controversy. They, above all other diseases, have given the impulse to public sanitation during the last half century. The degree of success with which their extension in a community is prevented is an important gauge of the excellence of the local sanitary arrangements. A clear comprehension of the origin and spread of these diseases signifies the solution of many of the most vexed and important problems of epidemiology and of State hygiene.

It is difficult to understand how those who accept the discovery that the bacteria causing typhoid fever and cholera have been found and cultivated from the stools of patients affected with these diseases can doubt that these patients are possible sources of contagion, or can entertain the view once so widely prevalent, that the infectious germs of these diseases are discharged from the body in a condition incapable of producing immediate infection. In an address delivered on another occasion, I have endeavored to present the considerations which reconcile the comparative infrequency of direct contagion for these diseases with the belief in the elimination of the causative germs in an active state from the body, and have there pointed out several well-known factors which determine the frequency of conveyance of an infectious disease by contagion. There are reasons, some of them very obvious, why diseases in which the infectious substances are operative only when received into the digestive tract, and are discharged usually only with the feces, are less likely to be transmitted by immediate contagion than those diseases in which the virus is thrown off from the skin on epidermal scales.

But the field of operation of direct contagion for these so-called miasmatic-contagious diseases is at most a restricted one, and the chief sources of infection are outside of the body from which primarily the infectious germs may have been derived. It is to these external sources of infection, which are of such importance in public hygiene, that I wish especially to direct attention.

A full comprehension of the sources of infection is, of course, to be obtained only by a detailed study of the etiology of the individual infectious diseases, but this is impossible within the limits of an address. It may, however, be useful to present some of the facts which have a general bearing upon the subject. Let us consider, then, from the point of view of modern bacteriological studies, what *rôle*, in harboring or in transporting infectious agents, may be played by those substances or media with which we necessarily come into intimate contact, such as the air, the ground, the water, and our food.

It is universally admitted that many infectious agents may be transported by the air, but the extent of danger from this source has often been exaggerated. It is a popular error to suppose that most of the minute particles of dust in the air either are or contain living organisms. The methods for determining the number and kind of bacteria and fungi in the air are now fairly satisfactory, although by no means perfect. These have shown that while the number of living bacteria and fungi in the atmosphere in and around human habitations cannot be considered small, still it is greatly inferior to that in the ground or in most waters. Unlike fungus spores, bacteria do not seem to occur to any extent in the air as single detached particles, which would then necessarily be extremely minute, but rather in clumps or attached to particles of dust of relatively large size. As a result in a perfectly quiet atmosphere these comparatively heavy particles which contain bacteria rapidly settle to the ground or upon underlying objects, and are easily filtered out by passing the air through porous substances, such as cotton-wool, or sand. Rain washes down a large number of bacteria from the air.

That the air bacteria are derived from the ground, or objects upon it, is shown by their total absence, as a rule, from sea air at a distance from land, this distance naturally varying with the direction and strength of the wind.

A fact of capital importance in understanding the relations of bacteria to the air, and one of great significance for preventive medicine, is the impossibility of currents of air detaching bacteria from moist surfaces. Substances containing pathogenic bacteria, as, for instance, sputum containing tubercle bacilli or excreta holding typhoid bacilli, cannot, therefore, infect the air unless these substances first become dry and converted into a fine powder. We are able to understand why the expired breath is free from bacteria and cannot convey infection, except as little particles may be mechanically detached by acts of coughing, sneezing, or hawking. Those bacteria, the vitality of which is rapidly destroyed by complete desiccation, such as those of Asiatic cholera, evidently are not likely to be transported as infectious agents by the air, if we except such occasional occurrences as their conveyance for a short distance in spray.

The only pathogenic bacteria which hitherto have been found in the air are the pus organisms, including the streptococcus found by Prudden in a series of cases of diphtheria, and tubercle bacilli; but no far-reaching conclusions can be drawn from the failure to find other infectious organisms when we consider the imperfection of our methods and the small number of observations directed to this point. The evidence in other ways is conclusive that many infectious agents—and here the malarial germ should be prominently mentioned—can be and often are conveyed by the air. While we are inclined to restrict within narrower limits than has been customary the danger of infection through the air, we must recognize that this still remains an important source of infection for many diseases. All those, however, who have worked practically with the cultivation of microorganisms have come to regard contact with infected substances as more dangerous than exposure to the air, and the same lesson may be learned from the methods which modern surgeons have found best adapted to prevent the infection of wounds with the cosmopolitan bacteria which cause suppuration.

We are not, of course, to suppose that infectious germs

floating in the form of dust in the atmosphere are dangerous, only from the possibility of our drawing them in with the breath. Such germs may be deposited on substances with which we readily come into contact, or they may fall on articles of food where they may find conditions suitable for their reproduction, which cannot occur when they are suspended in the air in consequence of the lack of moisture.

From the facts which have been mentioned concerning the relations of bacteria to the air, what points of view present themselves to guide us in preventing infection through this channel? Surely something more than that this purpose is accomplished simply by abolishing foul odors.

Certain indications are so plain as to need only to be mentioned in this connection, such as the disinfection and removal, as far as possible, of all infected substances, an indication which applies equally to all channels of infection, and which it is much easier to mention than it is to describe how it shall be realized. But there are two indications which apply especially to the prevention of the transportation of disease germs by the air. One is the necessity of guarding, as far as practicable, against the desiccation, when exposed to the air, of substances which contain infectious germs not destroyed by drying, and another is free ventilation.

For no disease is the importance of the first of these indications so evident and so well established as for tuberculosis, the most devastating of all infectious diseases. Against this disease, formidable as it may seem to cope with it, the courageous crusade of preventive medicine has begun, and is destined to continue.

It is now generally recognized that the principal, although not the sole, sources of tuberculous infection are the sputum of individuals affected with pulmonary tuberculosis and the milk of tuberculous cows. Cornet, who has made a laborious and most instructive experimental study of the modes and dangers of infection from tuberculous sputum, has also elaborated the practical measures which should be adopted to diminish or annihilate these dangers. These measures have been so recently and so widely published in medical journals, and so clearly presented before a section of this Association, that I mention them only to call the attention of practitioners of medicine to their importance, and to emphasize the fact that infectious substances of such nature as tuberculous sputum should not be allowed to become dry and converted into dust when exposed to the air.

By means of free ventilation, disease-producing microorganisms which may be present in the air of rooms are carried away and distributed so far apart that the chance of infection from this source is removed or reduced to a minimum. It is a well-established clinical observation that the distance through which the specific microbes of such diseases as smallpox or scarlatina are likely to be carried from the patient by the air, in such concentration as to cause infection, is small, usually not more than a few feet, but increases by crowding of patients and absence of free ventilation. The well-known experiences in the prophylaxis and treatment of typhus fever are a forcible illustration of the value of free ventilation.

It is, of course, not to be understood that by ventilation we accomplish the disinfection of a house or apartment. Ventilation is only an adjunct of such disinfection which, as already mentioned, is of first importance. Time will not permit, nor is it in the plan of this address, to discuss the details of such questions as house disinfection, but I may be permitted to say that the methods for disinfecting apartments have been worked out on a satisfactory experimental basis and should be known at least by all public health officers. Whether it be pertinent to this occasion or not, I cannot forbear to add my protest to that of others against placing reliance upon any method hitherto employed of disinfecting houses or apartments by fumigation. And I would, furthermore, call attention to the lack in most cities of this country of public disinfecting establishments such as are in use with excellent results in many cities of Europe, and which are indispensable for the thorough and convenient disinfection of clothing, bedding, carpets, curtains, etc.

After this short digression let us pass from the consideration of the air as a carrier of infection to another important external source of infection, namely, the ground. That the prevalence of many infectious diseases depends upon conditions pertaining to the soil cannot be questioned, but the nature and extent of this influence have been and are the subjects of lively discussion. The epidemiological school led by Pettenkofer assigns, as is well known, to the ground the chief and even a specific and indispensable influence in the spread of many epidemic diseases, particularly cholera and typhoid fever. The statistics, studies, and speculations of epidemiologists which have related to this subject probably surpass in number and extent those concerning any other epidemiological factor. The exclusive ground hypothesis has become an ingenious and carefully elaborated doctrine with those who believe that such diseases as cholera and typhoid fever can never be transmitted by contagion. These authorities cling to this doctrine with a tenacity which indicates that on it depends the survival of the exclusively localistic dogma for these diseases.

To all who have not held aloof from modern bacteriological investigations it must be clear that views which have widely prevailed concerning the relations of many infectious germs to the soil require revision. The question is still a difficult and perplexing one, but on some hitherto obscure or misunderstood points these investigations have shed light, and from the same source we may expect further important contributions to a comprehension of the relations of the ground to the development of infectious diseases.

The ground, unlike the air, is the resting or the breeding place of a vast number of species of microörganisms, including some which are pathogenic. Instead of a few bacteria or fungi in a litre as with the air, we find in most specimens of earth thousands, and often hundreds of thousands, of microörganisms in a cubic centimetre. Frānkel found the virgin soil almost as rich in bacteria and fungi as that around human habitations.

This vast richness in microörganisms belongs, however, only to the superficial layers of the earth. Where the ground has not been greatly disturbed by human hands there is, as a rule, about three to five feet below the surface an abrupt diminution in the number of living organisms, and at the depth where the sub-soil water usually lies, bacteria and fungi have nearly or entirely disappeared. Frānkel, who first observed this sudden diminution in the number of microörganisms at a certain level beneath the surface, explains this singular fact by

the formation at this level of that sticky accumulation of fine particles consisting largely of bacteria which forms the efficient layer in large sand filters for water. Of course, the number of bacteria and the depth to which they penetrate will vary somewhat with the character, especially the porosity, of the soil and its treatment, but the important fact that all, or nearly all, of the bacteria and fungi are retained in the ground above the level of the sub-soil water will doubtless hold true for most situations.

The conditions are not favorable for the multiplication of bacteria in the depth of the ground, as is shown by the fact that in specimens of earth brought to the surface from a depth of a few feet, the bacteria which are at first present, rapidly multiply. What all of the conditions are which prevent the reproduction of bacteria in the deep soil has not been ascertained, but the fact necessitates similar precautions in the bacteriological examination of the soil as in that of water.

We have but meagre information as to the kinds of bacteria present in the ground in comparison with their vast number. Many of those which have been isolated and studied in pure culture possess but little interest for us so far as we know. To some of the microörganisms in the soil appears to be assigned the *rôle* of reducing or of oxidizing highly organized substances to the simple forms required for the nutrition of plants. We are in the habit of considering so much the injurious bacteria that it is pleasant to contemplate this beneficent function so essential to the preservation of life on this globe.

Among the pathogenic bacteria which have their natural home in the soil, the most widely distributed are the bacilli of malignant œdema and those of tetanus. I have found some garden earth in Baltimore extremely rich in tetanus bacilli, so that the inoculation of animals in the laboratory with small bits of this earth rarely fails to produce tetanus. In infected localities the anthrax bacillus and in two instances the typhoid bacillus, so far as it was possible to identify it, have been discovered in the earth. There is reason to believe that other germs infectious to human beings may have their abiding place in the ground; certainly no one doubts that the malarial germ lives there. As the malarial germ has been shown to be an organism entirely different from the bacteria and the fungi, we cannot apply directly to its behavior in the soil and its transportation by the air, facts which have been ascertained only for the latter species of microörganisms, and the same precautions must be observed for other diseases with whose agents of infection we are not acquainted, as, for instance, yellow fever.

In view of the facility with which infectious germs derived from human beings or animals may gain access to the soil, it becomes a matter of great importance to determine how far such germs find in the soil conditions favorable for their preservation or their growth. We have, as is well known, a number of epidemiological observations bearing upon this subject, but with few exceptions these can be variously interpreted, and it is not my purpose to discuss them. The more exact bacteriological methods can, of course, be applied only to the comparatively small number of infectious diseases, the causative germs of which have been isolated and cultivated, and these methods hitherto have been applied to this question only imperfectly. We cannot regard the soil as a definite and unvarying substance in its chemical, physical, and biological properties. What has been found true of one kind of soil may not be so of another.

Moreover, we cannot in our experiments bring together all of the conditions in nature which may have a bearing on the behavior of specific microörganisms in the soil. We must, therefore, be cautious in coming to positive conclusions on this point on the basis of experiments, especially those with negative results. With these cautions kept constantly in mind the question, however, is one eminently open to experimental study.

The experiments which have thus far been made to determine the behavior of infectious microörganisms in the ground have related especially to the bacilli of anthrax, of typhoid fever, and of cholera, and, fortunately, these are the diseases about whose relations to the ground there has been the most discussion and concerning which we are most eager to acquire definite information.

As regards anthrax bacilli, it has been determined that in ordinary garden or field earth they do not multiply, but in earth contaminated by blood, urine, or feces their reproduction can occur. They can grow on various vegetable substrata. There is no reason to doubt, therefore, that the anthrax bacilli can find in or on the ground suitable conditions for their multiplication, although such conditions are not everywhere present. For durable infection of the soil with anthrax bacilli it is, however, more important that these bacilli should find there suitable conditions for the formation of spores, than that they should be able simply to multiply. The vegetative forms of anthrax bacilli would not, as a rule, be able to survive for a great length of time the hostile influences which they are likely to encounter in the ground, such as insufficient or exhausted nutriment, absence of sufficient moisture, and the attacks of saprophytic organisms. On the other hand, against these injurious influences the anthrax spores have great resistance. In the superficial layers of the ground the anthrax bacilli may often find those conditions of moisture, of temperature, of oxygen supply, and of insufficient food which we know are most favorable for the development of their spores; indeed, Soyka has shown that the ground presents often these conditions better than our culture media. A circumstance discovered by Feltz, which, however, needs confirmation, is, if true, of not little significance. He finds that anthrax bacilli may undergo a progressive diminution in virulence in the soil. If this should be true likewise of other infectious microörganisms, we should be able to account, in some instances, for the variable degree of virulence which clinical observation indicates that certain agents of infection acquire. So far as anthrax bacilli are concerned we may conclude, therefore, that the ground occasionally offers suitable conditions for their reproduction, but what is of greater importance, it offers especially favorable conditions for their long-continued preservation in the form of spores. I must forego here the further consideration of the special circumstances inherent in the soil which control the origin and spread of epidemics of anthrax in cattle, although many interesting investigations have been directed to this subject.

Of greater interest to physicians is the behavior of typhoid and of cholera bacteria in the ground. As has already been intimated the ground is regarded by Pettenkofer and his school as the principal breeding-place

of these microörganisms outside of the body. This view, however, is not supported by bacteriological investigations. Inasmuch as the cholera and the typhoid bacilli may multiply on various vegetable substrata and substances derived from animals, at temperatures often present in the ground, it is evident that here and there conditions may be present for their growth in the ground, but this growth is likely to be soon interrupted by the invasion of ordinary saprophytic organisms and other harmful influences. The typhoid bacilli are more hardy in resisting these invaders than are the cholera bacteria, which easily succumb, but even for the former, so far as our present knowledge extends, the ground can rarely serve as a favorable breeding-place.

It is not, however, necessary that these organisms should multiply in order to infect for a considerable time the ground; it is sufficient if their vitality is preserved. As to this latter point, the reports of different investigators are not altogether concordant. Such excellent observers as Koch, Kitasato, and Uffelmann found that the cholera bacteria, when added to feces or a mixture of feces and urine, rapidly diminished in number, and at the end of three, or four days at the most, had wholly disappeared. In a mixture of the intestinal contents from a cholera corpse with earth and water Koch found numerous cholera bacteria at the end of three days, but none at the end of five days. On the other hand, Gruber reports the detection of cholera bacteria in cholera dejecta fifteen days old. The weight of bacteriological evidence, therefore, is opposed to the supposition that the bacteria of Asiatic cholera preserve their vitality for any considerable time in the ground or in the excreta.

With respect to the bacilli which cause typhoid fever, it has been shown by Uffelmann that these may live in feces, mixture of feces and urine, and mixture of garden earth, feces, and urine for at least four and five months, and doubtless longer, although they may die at the end of a shorter period. He also finds that under these apparently unfavorable conditions some multiplication of the bacilli may occur, although not to any considerable extent. Grancher and Deschamps found that typhoid bacilli may live in the soil for at least five months and a half. Unlike the cholera bacteria, therefore, the typhoid bacilli may exist for months at least in the ground and in the fecal matter, holding their own against the growth of multitudes of saprophytes. This difference in the behavior of cholera and of typhoid germs is in harmony with clinical experience.

As regards other infectious bacteria than those which have been considered, I shall only mention that tubercle bacilli, although incapable of multiplication under the ordinary conditions of nature outside of the body, may preserve their vitality for a long period in the ground, on account of their resistant character, and, furthermore, that the pyogenic cocci, on account of their considerably resistant nature and their modest demands in the way of nutriment, can be preserved and sometimes probably grow in the ground. Indeed, the staphylococcus pyogenes aureus has been found in the earth by Lübbert.

The conclusion which we may draw from the observations mentioned is that, in general, the soil is not a good breeding-place for most of the infectious bacteria with which we are acquainted, but that it can retain for a long time with unimpaired vitality those which produce spores or which offer considerable resistance to injurious agencies, such as anthrax bacilli, tubercle bacilli, and the pyogenic cocci.

In order to become infected with bacteria in or on the ground, these bacteria must in some way be introduced into the body and we must, therefore, now attempt to determine how bacteria may be transported to us from the ground. So various and intricate are the possibilities for this transportation that it is hopeless to attempt to specify them all.

There occurs to us first the possibility of the conveyance of infectious microörganisms from the soil by means of currents of air, a mode of carrying infection which has already been considered. Here I shall only repeat that the wind can remove bacteria from the ground only when the surface is dry and presents particles of dust, and that the sole, and perhaps the chief, danger is not that we may inhale the infected dust.

Manifold are the ways in which we may be brought into contact with infectious bacteria in the ground, either directly, or indirectly by means of vegetables to which particles of earth are attached, by the intervention of domestic animals, by the medium of flies or other insects, and in a variety of other ways, more or less apparent.

An important, doubtless for some diseases the most important, medium of transportation of bacteria from an infected soil is the water which we drink or use for domestic purposes. From what has been said, it is evidently not the sub soil water which is dangerous, for infectious like other bacteria cannot generally reach this in a living state, but the danger is from the surface water and from that which trickles through the upper layers of the ground, as well as from that which escapes from defective drains, gutters, cesspools, privy vaults, and wrongly constructed sewers, or improper disposal of sewage. I shall have something to say presently of water as a source of infection and shall not further elaborate here the dangers of infection of drinking water through contaminated soil, dangers which, especially as regards typhoid fever, are widely appreciated in this country, even if often imperfectly counteracted.

A point which has been much discussed and one of interest, is whether bacteria which are in the depth of the ground can come to the surface. Two agencies especially have been considered by some as capable of transporting bacteria from the depth to the surface. One is ascending currents of air in the ground and the other is the capillarity of fluids in the minute pores of the ground. The first of these suspected agencies must be unquestionably rejected in view of the fact that even a few inches of sand is sufficient to filter all of the bacteria out of the air, even when it is in much more rapid motion than can occur within the ground. Moreover, that degree of dryness which is essential for the detachment of bacteria by air-currents is not likely to be present much below the surface of the ground. The experiments which have been made to determine to what extent bacteria may be carried upward by the capillarity of fluids in the ground have not yielded harmonious results, but the weight of evidence is opposed to the belief that this is a factor of any considerable importance for this purpose.

From what has been said concerning the growth of pathogenic bacteria in the soil we shall not be inclined to attribute to the multiplication and the motility of these organisms much influence in changing their place in the ground.

The somewhat sensational role assigned by Pasteur to earthworms of bringing bacteria to the surface cannot be wholly ignored and has received support from observations of Bollinger regarding anthrax, but it is questionable whether much importance is to be attached to this agency.

Regarding the depth to which typhoid bacilli may penetrate the soil, the experiments of Grancher and Deschamps show that at the end of five weeks they may reach a depth of sixteen to twenty inches below the surface. As Hoffmann has demonstrated the extraordinary slowness with which fluids and fine particles penetrate the soil, it is probable that in the course of time a greater depth than this may be reached. Indeed, Macé claims to have found in soil in the neighborhood of a well, suspected of infection, typhoid bacilli, together with ordinary intestinal bacteria, at a depth of at least six and one-half feet below the surface. There are a number of instances recorded in which there is reason to believe that turning up the soil and cleaning out privies or dung-heaps in which typhoid stools have been thrown, have given rise to typhoid fever, even after the infectious excreta have remained there a year and more.

It can not be said that bacteriological investigations have as yet shed much light upon a factor which plays a great *rôle* in epidemiology, namely, predisposition to infection from the ground according to locality and time, and this deficiency receives constant and vehement emphasis from the localistic school of epidemiologists. We can, however, readily understand that varying conditions, such as temperature, moisture, porosity, quality of soil, may exert a controlling influence in determining the behavior of infectious germs in the soil and the facility of their transportation to human beings or animals. As regards that much-discussed question, the significance of variations in the height of the sub-soil water in relation to the prevalence of certain epidemic diseases, particularly cholera and typhoid fever, we now know that this can not depend upon the presence of bacteria in the sub-soil water itself or in the capillary layers immediately above it. It has been plausibly suggested that with the sinking of the sub-soil water fluids from infected cesspools, privy vaults, and other localities may more readily be drawn into wells or other sources of water supply, and that by the same cause the surface of the ground becomes dry so that dust particles may be lifted by the wind. Other more or less plausible explanations have also been offered, but it must be confessed that our positive information on this point is meagre. There can, however, be little doubt that this significance of the variations in sub-soil water is apparent only for certain localities and has been considerably exaggerated and often misunderstood. It is not, however, pertinent to my theme to discuss this or other purely epidemiological observations concerning the relations of the ground to the spread of epidemic diseases, interesting and important as are many of these observations.

Before leaving the subject of the ground as a source of infection, permit me to indicate briefly some conclusions which may be drawn from what has been said as to the principles which should guide us in preventing infection directly or indirectly from the ground.

First in importance is to keep infectious substances as far as possible from the ground. This implies the early disinfection or destruction of such substances as typhoid and cholera excreta and tuberculous sputum.

Second. The ground should be rendered as far as practicable unsuitable for the continued existence of infectious germs. This, at least for some diseases, is accomplished by a proper system of drainage, which, moreover, for other reasons possesses hygienic importance.

Third. Means should be provided to prevent waste products from getting into the ground around human habitations or from gaining access to water used for drinking or domestic purposes. In cities this can be accomplished only by a properly constructed system of sewers. The system of storing waste products in cesspools whence they are to be occasionally removed can not be approved on hygienic grounds. There are conditions in which the disposal of waste products in deep wells only used for this purpose and whence these products can filter into the deep layers of the ground may be permissible, but this can never be considered an ideal method of getting rid of excrementitious substances and is wholly wrong in regions where wells are used for drinking water. But I am trespassing with these remarks upon a province which does not belong to me but rather to practical sanitarians and engineers. I shall only add that the advantage gained by preventing organic waste from soaking into the ground is not so much that the ground is thereby rendered better adapted to the existence of infectious microörganisms, but is due rather to the fact that this waste is likely to contain infectious germs.

Finally, in cities, good pavements, absence of unnecessary disturbance of the soil, cleanliness of the streets, and laying of dust by sprinkling, are not only conducive to comfort but are sometimes hygienically important in preventing infection from the ground and dust.

In passing from the consideration of the ground to that of water, one feels that he now has to do with a possible source of infection against which in this country and in England he is at liberty to make any accusation he chooses without fear of contradiction. There is reason to believe that such accusation has been repeatedly made without any proof of misdemeanor on the part of the water. It is not, therefore, with any desire to awaken further the medical or the public conscience that I wish to say a few words concerning the behavior of bacteria in water and the dangers of infection from this source. That such dangers are very real, must be apparent when we consider the universal employment of water and its exposure to contamination from all kinds of sources.

Ordinary water, as is well known, contains bacteria in large number. Not a few species of bacteria can multiply rapidly and to a large amount even in distilled water. These are the so-called water-bacteria, and, like most of the microörganisms found in ordinary drinking water, are perfectly harmless saprophytes. What we wish to know is, how pathogenic microörganisms conduct themselves in water. Can they grow or be preserved for any length of time in a living condition in water? As regards the multiplication of pathogenic bacteria in water, the results of different experimenters do not altogether agree. Whereas, Bolton failed to find any growth, but rather a progressive diminution in number of pathogenic bacteria planted in sterilized water, Wolff-

hügel and Riedel observed a limited reproduction of such bacteria, including those of typhoid fever and of cholera. This difference is due probably to the methods of experimentation employed. According to Kraus, these latter bacteria diminish rapidly in number in unsterilized spring or well water kept at a low temperature. These experiments indicate that water, even when contaminated with more organic impurities than are likely ever to be present in drinking water, is not a favorable breed ng-place for pathogenic bacteria. Still, it is to be remembered that these laboratory experiments do not reproduce exactly all of the conditions in nature, and it may happen that in some nook, or cranny, or vegetable deposit at the side of a well or stream some pathogenic bacteria may find suitable conditions for their multiplication.

But, as has been repeatedly emphasized in this address, it is not necessary that pathogenic bacteria should actually multiply in a medium in order to render it infectious. It is sufficient, if their life and virulence are not destroyed in a very short time. As to this important point, Bolton found that in sterilized water typhoid bacilli may preserve their vitality for over three months, and cholera bacteria for eight to fourteen days, while Wolffhügel and Riedel preserved the latter in water for about eighty days. Under natural conditions, however, these organisms are exposed to the overgrowth of the water bacteria, so that Kraus found in unsterilized water kept at a temperature of 10.5° C. (50.9° F.), the typhoid bacilli no longer demonstrable after seven days, and the cholera bacteria after two days. The conditions in Kraus's experiments were as unfavorable as possible for the continued existence of these pathogenic bacteria, more unfavorable than those often present at the season of prevalence of cholera and typhoid fever; nevertheless, I do not see that the experimental results justify the conclusions of Kraus as to the slight probability of drinking water ever conveying infection with the germs of typhoid fever and of cholera. To render such a conclusion probable it would be necessary to demonstrate a much shorter preservation than even Kraus himself found. In judging this question it should not be overlooked that infection of drinking water with the typhoid or the cholera germs is not so often the result of throwing typhoid or cholera stools directly into the source of water supply, as it is the consequence of leaky drains, cesspools, privy-vaults, or infected soil, so that there may be continued or repeated accessions of infected material to the water.

In view of the facts presented, there is no sufficient reason, therefore, from a bacteriological point of view, of rejecting the transmissibility of typhoid fever and cholera by the medium of the drinking-water. This conclusion seems irresistible when we call to mind that Koch once found the cholera bacteria in large numbers in the water of a tank in India, and that the typhoid bacilli have been repeatedly found in drinking water of localities where typhoid fever existed. Nor do I see how it is possible to interpret certain epidemiological facts in any other way than by assuming that these diseases can be contracted from infected drinking water, although I know that there are still high authorities who obstinately refuse to accept this interpretation of the facts.

In this connection it may be mentioned that pathogenic bacteria may preserve their vitality longer in ice than in unsterilized drinking water. Thus, Prudden found typhoid bacilli still alive which had been contained in ice for one hundred and three days.

When we come to consider the ways in which water may become infected with pathogenic microörganisms we recognize at once a distinction, in this respect, between surface water and sub-soil water. Whereas the sub-soil water may be regarded under ordinary circumstances and in most places as germ-free, the surface water, such as that in rivers and streams, is exposed to all manner of infection from the ground, the air, and the direct admission of waste substances. Unfortunately, in the ordinary way of obtaining sub-soil water for drinking purposes, by means of dug wells, this distinction is obliterated, for the water which enters these wells free from bacteria is converted into a surface water often exposed, by the situation of the well, to more dangerous contamination than other surface waters used for drinking purposes.

Now let us turn our attention, as we have done with other sources of infection, to a brief outline of certain general principles which may help us in avoiding infection from the water.

We shall, in the first place, avoid as far as possible the use of water suspected of infection, especially with the germs of such diseases as typhoid fever and cholera. When it is necessary to use this suspected water it should be boiled.

As regards the vital question of water supply, it may be stated as a general principle that no hygienic guarantee can be given for the purity of surface water which has not been subjected to a proper system of filtration, or for the purity of spring or well water fed from the sub-soil unless such water is protected from the possibility of infection through the upper layers of the soil or from the air. This is not saying that water which meets certain chemical and biological tests, and which is so situated that the opportunities for its contamination appear to be absent or reduced to a minimum, is not admissible for the supply of drinking water, but the possibility of infection can be removed only by the fulfilment of the conditions just named, and upon these conditions the hygienic purist will always insist.

Unfortunately, we have at present no domestic filters which are satisfactory, and most of those in common use are worse than none, as they soon furnish a filtrate richer in bacteria than the original water. The only effective method of water-filtration for the general supply is by means of large sand filters, such as are in use with excellent results in Berlin and some other cities. These require skilled attention. I cannot on this occasion discuss the construction or working of these filters, but would refer those who are interested to the full and careful investigations of the Berlin filters by Wolffhügel and by Plagge and Proskauer.

What is accomplished by these artificial sand filters is accomplished under natural conditions also by the ground, which furnishes a sub-soil water free from microorganisms, and to obtain pure water we have only to devise means by which this sub-soil water may be secured without the chance of contamination. Just as the water, which has passed through the sand filters, is collected in suitable reservoirs and is distributed in pipes, which do not admit contamination from without, so by means of properly constructed artesian or driven wells we may

secure the naturally filtered sub-soil water with the same freedom from the chances of infection.

It is well to bear in mind that no biological or chemical tests of water can replace those measures which have been mentioned as necessary to secure purity of water supply. These tests are of value only when applied with proper precautions and with due consideration of the special circumstances of each case for which they are employed.

There has been much profitless discussion as to whether greater significance is to be attached to the chemical or to the bacteriological examination of water. Each has its own special field of application, and in this the one cannot replace the other method. The bacteriological examination has for hygienic purposes the advantage that it may enable us to detect the specific agents of infection in the form of microörganisms, as has already been done for cholera bacteria and typhoid bacilli, but this is a comparatively rare result and does not at present afford a wide field of application for this method. The significance of the bacteriological test is to be based more frequently upon the fact that it concerns itself with the same class of microörganisms to which some of the recognized and doubtless many of the undiscovered infectious agents belong, and from the behavior of which in some respects conclusions can be drawn as to the behavior of the pathogenic organisms. Thus the bacteriological test is the only one which enables us to judge correctly of the efficacy of those methods of filtration of surface water and of construction of wells which insure purity of water supply. The points of view from which we can estimate correctly, according to our present knowledge, the relative merits and fields of application of the chemical and of the bacteriological methods of water examination have been clearly indicated by Plagge and Proskauer and by Wolffhügel. The theme is one beyond the limits or the scope of this discourse, and I have referred to it chiefly to emphasize the fact that we cannot rely upon chemical or bacteriological tests of water to the exclusion of those protective measures which have been mentioned, although I do not intend to imply that each of these tests when properly employed does not afford important information and is not of great value in many cases.

I have already taxed so largely your time and patience that I must pass over with brief mention the food as a source of infection. Unlike those external sources of infection, which we have hitherto considered, many articles of food afford an excellent nutritive medium for the growth of a number of species of pathogenic microorganisms, and in many instances this growth may be abundant without appreciable change in the appearance or taste of the food.

When we consider in how large degree the certainty and the severity of infection with many kinds of pathogenic microörganisms depend upon the number of such organisms received into the body, we can appreciate that the danger of infection from food which contains a mass of growing pathogenic bacteria may be much greater than that resulting from the reception of infected water or air, media in which infectious organisms are rarely present in other than a very dilute condition. The entrance into the body of a single infectious bacterium with the inspired air is, at least in the case of many diseases, not likely to cause infection; but let this bacterium fall upon some article of food, as for instance upon milk, where it can multiply in a short time at a favorable temperature many thousand fold, and evidently the chances of infection become vastly increased.

Among the various agencies by which infectious organisms may gain access to the food may be mentioned the deposition of dust conveyed by the air, earth adhering to vegetables, water used in mixing with or in the preparation of food, in cleansing dishes, cloths, etc., and contact in manifold other ways with infected substances.

Fortunately, a very large part of our food is sterilized in the process of cooking shortly before it is partaken, so that the danger of infection from this source is greatly diminished and comes into consideration only for uncooked or partly cooked food and for food which, although it may have been thoroughly sterilized by heat, is allowed to stand considerable time before it is used. Milk, in consequence of its extensive employment in an unsterilized state and of the excellent nutritive conditions which it presents to many pathogenic bacteria, should be emphasized as especially liable to convey certain kinds of infection—a fact supported not less by bacteriological than by clinical observations. Hesse found that also a large number of ordinary articles of food prepared in the kitchen in the usual way for the table and then sterilized afford a good medium for the growth and preservation of typhoid and cholera bacteria, frequently without appreciable change in the appearance of the food.

Upon solid articles of food bacteria may multiply in separate colonies so that it may readily happen that only one or two of those who partake of the food eat the infected part, whereas with infected liquids, such as milk, the infection is more likely to be transmitted to a larger number of those who are exposed.

In another important particular the food differs from the other sources of infection which we have considered. Not only the growth of infectious bacteria, but also that of bacteria incapable of multiplication within the body may give rise in milk and other kinds of food to various ptomaines, products of fermentation, and other injurious substances which when ingested are likely to cause more or less severe intoxication, or to render the alimentary tract more susceptible to the invasion and multiplication of genuinely infectious organisms.

It is plain that the liability to infection from food will vary according to locality and season. In some places and among some races the proportion of uncooked food used is much greater than in other places and among other races. In general, in summer and in autumn the quantity of fruit and food ingested in the raw state is greater than at other seasons, and during the summer and autumn there is also greater danger from the transportation of disease germs from the ground in the form of dust and the amount of liquids imbibed is greater. The elements of predisposition according to place and time upon which epidemiologists are so fond of laying stress are not, therefore, absent from the source of infection now under consideration.

I have thus far spoken only of the secondary infection of food by pathogenic microörganisms, but, as is well known, the substances used for food may be primarily infected.

Chief in importance in this latter category are the vari-

ous entozoa and other parasites which infest animals slaughtered for food. The dangers to mankind resulting from the diseases of animals form a separate theme which would require more time and space than this address affords for their proper consideration. I shall content myself on this occasion with only a brief reference to infection from the milk and flesh of tuberculous cattle.

It has been abundantly demonstrated by numerous experiments that the milk from tuberculous cows is capable, when ingested, of causing tuberculosis. The milk may be infectious not only in cases in which the udder is tuberculous but also when the tuberculous process is localized elsewhere. How serious is the danger may be seen from the statistics of Bollinger, who found with cows affected with extensive tuberculosis the milk infectious in eighty per cent. of the cases, in cows with moderate tuberculosis the milk infectious in sixty-six per cent. of the cases, and in cows with slight tuberculosis the milk infectious in thirty-three per cent. of the cases. Dilution of the infected milk with other milk or with water diminished or in sufficient degree it removed the dangers of infection. There is reason to believe that many of the so-called scrofulous affections in children are due to infection from milk derived from tuberculous cows. Probably for adults the danger of acquiring tuberculosis from the use of infected milk is relatively small. Bollinger estimates that at least five per cent. of the cows are tuberculous. From statistics furnished me by Mr. A. W. Clement, V. S., it appears that the number of tuberculous cows in Baltimore which are slaughtered is not less than three to four per cent. Among some breeds of cows tuberculosis is known to be much more prevalent than this.

There is no evidence that the meat of tuberculous cattle contains tubercle bacilli in sufficient number to convey infection, unless it be very exceptionally. Nevertheless, one will not willingly consume meat from an animal known to be tuberculous. This instinctive repugnance, as well as the possibility of post-mortem infection of the meat in dressing the animal seem good grounds for discarding such meat. The question, however, as to the rejection of meat of tuberculous animals has important economic bearings and has not been satisfactorily settled. As to the propriety of the rejection of the milk from such animals, a matter, however, not easily controlled, there can be no difference of opinion.

The practical measures to adopt in order to avoid infection from the food are for the most part sufficiently obvious. Still it is not to be expected that every possibility of infection from this source will be avoided. The pleasure of living would be destroyed if one had his mind constantly upon escaping possible dangers of infection. It is difficult to discuss the matters considered in this address without seeming to pose as an alarmist. But it is the superficial and half knowledge of these subjects which is most likely to exaggerate the dangers and awaken unreasonable fears. While one will not, under ordinary circumstances, refrain from eating raw fruit or food which is palatable, although it may not have been thoroughly sterilized by heat, or from using the natural water unboiled, in the fear that he may swallow typhoid or cholera bacteria, still in a locality infected with typhoid fever or cholera he will, if wise, not allow himself the same freedom in these respects. Cow's milk, unless its source can be carefully controlled, when used as an habitual article of diet, as with infants, should be boiled or the mixed milk of a number of cows should be selected; but this latter precaution offers less protection than the former.

In most places in this country we are sadly lacking in good sanitary inspection of the food, especially of the animal food, offered for sale. One cannot visit the admirable slaughter-house in Berlin or that in Munich, and doubtless similar ones are to be found elsewhere, and watch the intelligent and skilled inspection of the slaughtered animals without being impressed with our deficiency in this respect. In large cities an essential condition for the efficient sanitary inspection of animal food is that there should be only a few places, and preferably only one place, where animals are permitted to be slaughtered. Well-trained veterinarians should be selected for much of the work of inspection.

It may reasonably be asked that the National Government, which has already spent so much money for the extermination of such diseases as pleuro-pneumonia of cattle and hog cholera, which are not known to endanger the health of mankind, should turn some of its resources and energies also to means for the eradication of tuberculosis from cattle, which is a scourge not only to the economic interests of farmers and dairymen, but also to the health of human beings.

Without any pretension to having done more in this address than to sketch here and there a few principles derived from bacteriological researches concerning only some of the most widely distributed external sources of infection, I trust that enough has been said to show the folly of any exclusive dogma as to modes of infection. The ways of infection, even in one and the same disease, are manifold and various, and can never be resolved into exclusive hypotheses, such as the drinking-water hypothesis, the ground hypothesis, etc.

It follows, therefore, that it is not by sanitary improvements in one direction only that we can control the spread of preventable epidemic diseases. In one situation improvements in the supply of drinking-water check the prevalence of typhoid fever, in another place similar measures show no such influence; or again, in one city the introduction of a good system of sewerage diminishes epidemic diseases, and in another no similar result follows. We should, therefore, aim to secure as far as possible good sanitary arrangements in all directions and in all respects.

It has also been rendered evident in what has been said that infectious agents differ markedly from each other in their behavior, so that while public sanitation aims at those measures which are found to be most widely beneficial, it should not forget that each infectious disease is as much a separate problem in its prophylaxis, as in its symptomatology, etiology, and treatment. It will not aim to combat cholera with the means found best suited to scarlet fever, but it will adapt preventive measures as directly to the specific end in view as possible.

In presenting to you the results of researches, chiefly bacteriological, concerning the scientific basis of preventive medicine, I hope to escape the accusation of one-sidedness and narrowness by the statement that I do not for a moment intend to imply that the bacteriological method is our only source of accurate knowledge on the subjects which have been considered. My aim is accom-

plished if I have succeeded in making clear that this method has established facts which aid in a clearer conception of the causes of some important infectious diseases, in a better understanding of the sources and dangers of infection, and in a more efficient selection and application of sanitary measures.

If this science of only a few years' growth has furnished already acquisitions to knowledge so important, so far-reaching, may we not look forward with assurance to the solution of many dark problems in the domain of infectious diseases, problems the solution of which may yield to preventive medicine a future of usefulness and success which we cannot now foresee.

ORIGINAL ARTICLES.

TETANOID PARAPLEGIA, WITH CASES.

By JAMES K. YOUNG, M.D.,
INSTRUCTOR IN ORTHOPEDIC SURGERY, UNIVERSITY OF PENNSYLVANIA, AND ATTENDING ORTHOPEDIC SURGEON, OUT-PATIENT DEPARTMENT UNIVERSITY HOSPITAL.

Since attention was first directed in 1873, by Seguin,[1] to a symptom group now known as tetanoid paraplegia (Seguin), spastic spinal paralysis (Erb[2]), and tabes dorsal spasmodique (Charcot[3]), etc., much has been written upon the subject. Some confusion, however, still exists, owing in great measure to the multiplicity of terms by which the affection is known. In fact, many of the statements made in the first paper of Seguin were subsequently modified; out of the five cases reported, three were cases of Pott's disease, one was a case of amyotrophic lateral sclerosis (verified by post-mortem examination), and one a case of specific myelitis.

From these severe cases with marked lesions, to those functional cases dependent on genital or other peripheral irritation (Sayre), the number and variety of cases presenting a tetanoid condition of the muscles is large. These, from a pathological standpoint, are best divided, according to Seguin, into those due to

1. Primary sclerosis of the lateral columns (crossed pyramidal column);
2. Various lesions of the spinal cord, chiefly myelitis;
3. Functional tetanoid paraplegia (Sayre); and
4. Defective cerebral development.

It is, however, more particularly with that group of the affection occurring in children (frequently premature), in which, with or without defective cerebral development, with or without a discoverable lesion, the limbs are contracted, adducted, stiffened, and incoördinate, that the writer is interested, and of which he wishes to record five cases which have come under his notice during the last three years. These cases are such as that referred to by Seguin,[1] of a child, six years of age, attending his clinic, and of the two boys reported by Erb,[2] aged four and a half and three and a half years respectively, the first of premature (seven months) birth, in none of which was there any hereditary predisposition or cause discoverable. Similar cases were also recorded, before the disease was well understood, by such orthopedic writers as Adams,[3] who described them as "deformity with rigid muscles," and also earlier by Little,[4] as "spastic contraction," and it is interesting to observe that both refer to premature birth as a probable cause, the latter[5] citing twelve cases out of twenty-four, eight of whom were in the seventh month, as were also one of Erb's and one of the writer's.

Symptoms.—In children the condition usually appears at birth, or within the first year, although it may occur later. There is no osseous lesion (Pott's) nor pressure symptoms (myelitis), and they present the following symptoms: The lower limbs are drawn by the strongest muscles into a condition of spasmodic rigidity, the thighs flexed upon the pelvis and slightly adducted, the knees flexed and firmly adducted, so that they touch, or even overlap, the feet inverted and strongly extended in a position of extreme equino-varus. The contractions readily yield to firm, continuous manual pressure, but immediately return upon its removal. The child stands with assistance, resting upon the ball of the foot and toes, and walks, if at all, with a rapid, swinging, irregular gait, typical of the disease, and with the knees overlapping at every step. There is usually no anæsthesia, ataxia, atrophy, or any vesical or rectal incontinence, such as is found in the graver forms. There is no loss of equilibrium standing with the eyes closed, and the reflexes are exaggerated.

In the upper extremity the same condition exists, but to a less degree. The arms are approximated to the side, the forearm slightly flexed, and the hands flexed and pronated. The flexors of the trunk are sometimes contracted, and the head may be drawn forward and to one side (wry-neck). Strabismus may occur early, and occasionally persists. The configuration of the head at times resembles that of the idiot, and with the half-silly, vacant stare, and an imperfect speech, presents the appearance of a lack of intelligence which does not always exist.

Case I. was studied by the writer while under the care of Dr. Roberts at the Philadelphia Hospital, and the report is taken from his Clinical Lectures:[6]

[1] Archives of Scien. and Prev. Medicine, Feb. 1873, New York, p. 100.
[2] Zeitschrift für Psychiatrie, Bd. xxxii., 1875.
[3] Leçons sur les Maladies du Système nerveaux, 1887, t. ii., 15me., Leçon, p. 275.

[1] Archives of Medicine, February, 1879, p. 9.
[2] Memorabilien, 1887, 12 Heft.
[3] Club-foot, etc., Jacksonian prize, 2d ed., 1873, p. 64.
[4] Def. of the Human Frame, London, 1853, p. 106.
[5] Ibid, p. 117.
[6] Clin. Lectures on Orthopedic Surgery, No. 1, 1886, p. 10.

"Barney, æt. six years. No record or information could be obtained regarding previous history. . . . The thighs are adducted and slightly flexed upon the pelvis. The legs are held firmly at a moderate degree of flexion at the knee-joint. The feet are extended and inverted in the position of pronounced equino-varus. All muscular groups of the lower limbs are in a condition of spasmodic rigidity. . . . These contractions may be temporarily overcome by firm and continuous pressure, but immediately reappear upon the removal of the opposing force. Locomotion, with assistance, is accomplished with difficulty by a swinging, discordant gait typical of the disease, the patient walking only upon the ball of the feet and toes, the weight of his body not being sufficient to overcome the contraction and bring the heels to the floor. The other symptoms characteristic of the central lesion—deficient intelligence, strabismus, exaggerated muscular reflexes, and general rigidity and spasm of the muscular system—are all present. Tenotomy of each tendo Achillis was performed, with marked improvement in his condition."

CASE II.—Ella S , female, æt. two years, residing in Philadelphia, came under my care in September, 1886. Father blacksmith by occupation, in good health, but all his family had died of phthisis. Mother in good health, but natural sister has chorea. The child has one brother and three sisters, all in good health, except one sister who has urinary trouble (?).

There was no direct cause for the deformity. It was first noticed that the child could not sit alone nor creep, and later, that it could rise but could not stand nor walk alone. The lower extremities were in a condition of spastic contracture, the feet being in a position of equino-varus.

Under tonics, sedatives, and massage without tenotomy, the condition rapidly improved, and the case was reported by letter after four months cured.

CASE III.—Eddie S., male, æt. five years, born in Pennsylvania, came under the writer's care in the spring of 1887. Father, laborer, was in good health. The mother has some uterine disease (?). No hereditary tendency could be elicited, nor cause assigned for the deformity. It was first noticed that the child walked late (not until two and a half years). The symptoms of contracture gradually advanced, and an examination presented the condition above described. The patient was put under treatment, but disappeared from notice before a cure had been effected.

CASE IV.—Annie D., æt. five years, born in Ireland, of Irish parents. Father, laborer, in good health. Mother in fair health. Has two brothers and one sister, all in good health. There is no hereditary predisposition or cause known.

It was first noticed when the child began to walk, that the left ankle was weak. The patient is a well-nourished brunette child in good general health. The left lower extremity is somewhat wasted, and in the position already described, the foot in a position of equino-varus, its flexion and extension (extreme) limited by spasmodic contraction. The temperature is somewhat lowered. Under appropriate treatment the case improved.

CASE V.—Maggie F., female, æt. four, born in New Jersey, of healthy Irish parents, at the seventh month, the mother having suffered a severe fall. She was hand-fed from birth, and for many months she remained small and delicate. There was no hereditary predisposition to nervous affections, nor any cause known. Her present condition (May, 1889) is that of a small, brunette, poorly developed child, with "silly" expression and hesitating speech. The mental condition, however, appears to be good. There is no vesical or rectal difficulty. The skin and muscles are normal. Both lower extremities, and the right upper extremity, are in a condition of tetanoid paraplegia. The position of the former is characteristic, and the contractions can all be overcome by manual pressure except the left foot, which cannot be brought beyond 90°. With assistance, locomotion is accomplished by short, quick, irregular steps, the knees crossing and the feet extended. She is still under observation and treatment.

Prognosis will depend upon the cause. If this be a central lesion, little can be accomplished without operative interference; but if from peripheral irritation, the removal of this may at least temporarily relieve the symptoms.

Treatment should consist of tonics and sedatives combined with friction and massage. If the contraction appears to be due to an adherent or contracted prepuce, circumcision should be at once performed. This, in a certain number of cases, has no effect whatever, or is only temporarily beneficial, as pointed out by Dr. Eugene Dupuy,[1] referring to the cases reported by Sayre,[2] and the writer has observed the same in a case operated upon by another surgeon.

An attempt should be made to straighten the contracted parts by mechanical stretching, after the well-known method of Dr. Newton M. Schaffer, of New York, failing in which tenotomy should be performed, the parts that will require division being usually the tendo Achillis, adductors of foot, hamstrings, and adductors of thigh. This, as the researches of Rupprecht[3] demonstrate, not only improves the position of the limbs, but also decidedly benefits the mental condition. After tenotomy an ordinary varus walking shoe, combined with a Congdon to fix the knee, should be worn for some time.

A THIRD CASE OF HEREDITARY CHOREA.[4]

BY CLARENCE KING, M.D.,
OF MACHIAS, N. Y.,
PHYSICIAN TO THE CATTARAUGUS COUNTY INSANE ASYLUM.

THE earliest mention of the hereditary form of chorea which we find in medical literature is in a communication from Dr. C. O. Waters, of Franklin, N. Y., to Prof. Robley Dunglison, of Philadelphia,

[1] Journ. Nerv. and Ment. Dis., April, 1887, p. 232.
[2] On Reflex, Paralysis, etc., Trans. Amer. Med. Assoc., 1870.
[3] Volkmann's Clinical Lectures.
[4] A paper read before the Cattaraugus County Medical Society, June 5, 1889.

and is dated May 5, 1841. The salient points differentiating it from the ordinary form of the disease were stated by him to be: 1st, its development in adult life; 2d, heredity its only known etiological factor; 3d, its constantly progressive character and death its only termination. This letter was published by Prof. Dunglison in his forthcoming work on the Practice of Medicine, and may be found in the third edition, volume 2, page 216.

In 1872 Dr. George Huntington, of Pomeroy, Ohio, called attention[1] to this disease, and until recently I have considered this the second paper published on the subject. But, from a valuable monograph by Dr. Wharton Sinkler, of Philadelphia, a reprint of which he has kindly sent me, I find that Dr. Irving W. Lyon preceded Huntington with a paper[2] which was published in the *American Medical Times* for December 19, 1863. He speaks in particular of the hereditary nature of the disease, and cites brief histories of three cases in his practice.

I have been familiar with this form of chorea for years, and recollect the fear and timidity which possessed me when in childhood I was obliged to pass one of these patients on my way to and from school. Later, I made this disease the subject of a thesis which I presented for my degree in medicine in February, 1885, and which was published in the *New York Medical Journal* of April 25th. In that brochure I narrated the history of the disease as observed in these patients, and made reference to the observations of Waters and Huntington.

A second case of hereditary chorea occurred in my practice at the Cattaraugus County Insane Asylum in 1886, and a short account of it was given by me in the *Medical Press of Western New York* for December. I now wish to call attention to a third series of cases, two of the patients likewise being under my care at the insane asylum.

Mrs. S., aged thirty-eight, married, mother of one child, which died in infancy. Has suffered from chorea since she was twenty years of age; was admitted to the asylum May 19, 1886, and placed in the ward for imbeciles. She died of chorea January 30, 1888.

The earliest occurrence of this disease which we can find among this patient's ancestors was in the person of her paternal grandmother, Mrs. C. She is said to have died with chorea at an advanced age, having suffered with it for many years.

Mrs. C. had four children, one of whom—Abel C., the father of our patient—was afflicted with it from about the age of forty to the time of his death at seventy years; the other three children escaped, and none of their progeny, so far as is known, have ever developed the disease. Abel C. was an inmate in the poor department of our county asylum for about two and a half years, and died there several years before my service as physician began. No written history of his case was made, but the superintendent and my father, who was the physician in attendance at that time, remember well the patient.

Abel C. had six children, all of whom lived to have families. Two of these, Mrs. S., our patient at the time of her death, and Henry C., who is now under our care, became afflicted with the disease, the other four children escaping it. Of their descendants, however, no reliable information is obtainable.

Henry C., Mrs. S.'s brother and our present patient, is sixty years of age and has had this disease gradually coming on for fourteen years. He is the father of eight children, the eldest about twenty-two years of age. He has two children under fourteen years of age. Two of his children are said to show unmistakable signs of the disease, their ages being eighteen and sixteen years.

Present condition.—Nearly every muscle seems to be involved, the movements being increased if the patient is watched, but ceasing entirely during sleep. Respiration irregular; can walk without assistance but occasionally falls; is able to stand for a short time and walk a few steps with his eyes closed;[1] patellar reflex present; appetite good but not voracious; body well nourished; bowels regular; somewhat wakeful at night; eyes apparently normal; memory poor and mind evidently failing, but without hallucinations.

Elsewhere[2] I have made the statement that the appetite is greatly increased, especially in the advanced stages of the disease, and continues unabated until a short time before death. This I have noticed in two of my patients, and it is said to have been the case with others in the family of my first patients, at least, who died of the disease. Mrs. S. had food in her mouth almost continually, but it would be impossible to estimate how much she swallowed, as a large proportion of it escaped from her mouth during mastication. Henry C.'s appetite is only good for a non-laboring man. Other writers on hereditary chorea make no mention of an excessive appetite attending the disease, but several speak of the "good appetite" which their patients enjoy.

I have also noticed that some patients have certain peculiarities about their movements which others have not. Thus, Mrs. S. was accustomed to stand for many hours, especially when trying to masticate food, with her body thrown forward to the level of her hips and her arms extended backward by the side of her body, the palms being upward. She only assumed the upright position, unless spoken to,

[1] Medical and Surgical Reporter, April 13, 1872.

[2] Chronic Hereditary Chorea. By Irving W. Lyon, M.D.

[1] Other patients, not as far advanced with this disease, whom I have tested for this symptom, so prominent in locomotor ataxia, have been able to stand for any length of time and walk any distance with the eyes closed.

[2] Medical Press of Western New York, December, 1886.

at long intervals and then only for a few seconds. Henry C. frequently extends one arm as if to grasp some object in front of his face. Another patient developed a peculiar gait in walking which I have described in detail in a former paper.

It has been said that this form of chorea appears only in adult life, but to this rule there are exceptions. Hoffmann has reported a case in which choreic movements began at ten years, and Lyon one in which they had existed "from puberty." As mentioned above, two of Henry C.'s children showed choreic symptoms at sixteen and eighteen years of age.

In the earlier stages the sexual function seems to be but little impaired; later, it is notably weakened or entirely lost. Henry C. became the father of two children after he began to show choreic symptoms. Mrs. S. did not menstruate while under our observation. Other writers have made no observations as to the sexual functions, and I am unable to find another instance mentioned in the literature of the disease where a child was born after either parent became choreic. Huber mentions a lady, a sister of his patient, who gave birth to a child in 1877, having been "slower in her work, and indifferent" since 1873. After this she became "unruly and forgetful," and in 1880 showed choreic movements of the elbow.

Concerning the pathology of the disease, I will admit that I know nothing definite. In the case of the father of Huber's patient, who died insane, having had chorea for years, an autopsy revealed the presence of "pachymeningitis and internal meningitis." Dr. William Osler, of Philadelphia, has recently made an autopsy on a patient dying with this disease, but I have not seen a report of it as yet. One fact, however, appears to be demonstrated to the satisfaction of the profession, and that is, the close relation between hereditary chorea and other diseases of the nervous centres, notably epilepsy and insanity. Indeed, insanity appears to be a quite common termination of the disease, and in a number of instances epilepsy has been found in patients who, from their hereditary predisposition, we might expect to have chorea. My father, who was acquainted with choreic families on Eastern Long Island, possibly the same that Huntington observed, states that hereditary insanity was common there, and that certain individuals in choreic families became insane without having chorea.[1]

The treatment of this disease therapeutically is as unsatisfactory as our knowledge of its pathology. Hygienic measures and systematic training may postpone or prevent its development in a person predisposed to it, but after it has once made its appearance its march is constantly forward, and nothing can stop its progress but death. Sinkler prescribed large doses of hyoscine and arsenic, and thinks for a time the movements were less severe, but admits "there was no material benefit done." In the treatment of my patients I have not attempted to cure or ameliorate the twitching of the muscles. I rest content in remedying, so far as I am able, any intercurrent malady or functional irregularity which may be present, and leave the unfortunate being to await his final cure from more skilful hands than mine.[1]

MEDICAL PROGRESS.

Rapid Cure of Erysipelas.—In the discussion which followed the reading of a paper on "The Use and Misuse of Disinfectants and Deodorizers in Medicine," by Dr.

[1] My father's native town of East Hampton, Long Island, was settled as early as 1649, and choreic families have lived there for generations. Previous to 1800 there were several emigrations from the town to eastern and northern locations, one of these being to the western shores of Lake Champlain, near Plattsburg; another to the Mohawk Valley in Oneida County; another to Delaware County; and a fourth one to some place in Vermont. It is interesting to note that Dr. Waters's observations were made upon patients living at Franklin, Delaware County; two of the three cases given by Lyon were in "New York State," town and county not given; Huntington's cases were on "Eastern Long Island;" and Sinkler's first patient was "born in New York State." The father of my second patient came from Vermont, town unknown, and the parents of my present patient came from Oneida County, New York. One of Lyon's cases was in Connecticut, only a short distance by water from Long Island, and Sinkler's second case was in Wyoming County, Pa., only seventy-five miles from Delaware County, N. Y. My first choreic patients were of Welsh descent, the great grandfather (who afterward had the disease) coming from Wales and settling in Vermont. He afterward moved to Plattsburg, N. Y., and still later came to Western New York. All the other cases reported have been in Europe. Possibly, if we were in possession of the complete ancestral history of our patients, we could trace all the cases of the disease in this country, except my first case, to one centre of origin at East Hampton, Long Island. Or is this coincidence merely accidental?

[1] I append a chronological list of papers which have appeared with references where they may be found:

Waters, 1841. Dunglison's Practice of Medicine, third edition, vol. ii. p. 216.

Lyon, 1863. American Medical Times, December 19.

Huntington, 1872. Medical and Surgical Reporter, April 13.

Landouzy, 1873. Soc. de Biologie.

Ewald, 1884. Zeitschr. f. klin. Med., Bd. 7.

King, 1885. New York Medical Journal, April 25.

Peretti, 1885. Berliner klinische Wochenschrift, Nos. 50 and 51.

King, 1886. Medical Press of Western New York, December.

Oppenheim. Berliner klinische Wochenschrift, xxiv. 309.

Huber, 1887. Virch. Arch., c. viii. S. 267.

Leppilli. Rev. di freniat, xiii. 453.

West, 1887. British Medical Journal, February 26.

Zacher, 1888. Neurolog. Centralbl., No. 2.

Zacher. Neurolog. Centralbl., vii. 34.

Hoffmann, 1888. Virchow's Archiv, iii. 3, 513.

Launois, 1888. Revue de Méd., August 10.

Sturges, 1888. Lancet, ii. 605.

Sinkler, 1889. Journ. of Nervous and Mental Diseases, February.

Sée has also written on the subject, but I cannot give reference to his paper.

Abstracts from the papers of Ewald, Huber, Zacher, and Hoffmann have been published in the American Journal of the Medical Sciences.

Henry Jackson, in the Suffolk District Medical Society, DR. J. C. WHITE took exception to the reader's statement regarding our lack of control over erysipelas. He said:

"I would like to state that I consider that one may get absolute control over erysipelas generally within three days by simple treatment. Of one hundred cases of ordinary facial erysipelas treated I should not expect more than three that would not yield within three days, very likely within forty-eight hours with the simplest antiseptic treatment. My custom is always to treat cases of that sort by the application during alternate hours of the day and evening of a mild solution of carbolic acid in alcohol and water as an evaporating lotion. It is only in very exceptional cases that the disease is not almost completely under control, and has disappeared within forty-eight hours; but after three days it would be extraordinary if by this means every vestige of the disease had not disappeared. This has been my only treatment in erysipelas for many years. I have never known it to fail. I have never given a drop of medicine internally. I feel that I have absolute control over the disease. I am speaking now of ordinary erysipelas, not of the deep-seated phlegmonous erysipelas, of course."

When asked the strength of the solution used, Dr. White gave the following formula:

R.—Cryst. carbolic acid . . . ʒss.
Alcohol }
Water } . . . . āā ʒjv.—M.

—*Boston Medical and Surgical Journal*, June 13, 1889.

Peculiar Nervous Affection of the Upper Limbs.—In the *Nouvelle Iconographie de la Salpêtrière* just issued, M. PAUL BLOCQ describes an affection which is characterized by symmetrical atrophic paralysis, with disorder of sensation exactly corresponding to the musculo-cutaneous distribution of the ulnar nerve. In these characters the affection resembles amyotrophy of cord and nerve origin and primary myopathy, as well as amyotropic lateral sclerosis. It is an affection which runs parallel with a similar lead neuritis of the musculo-spiral nerve. What, then, constitutes its peculiarity? That there exists a group of such cases, having no very obvious cause, is, perhaps, sufficient to warrant a separate clinical class being established. Cases of the kind have followed typhoid fever, and very likely have been due to neuritis. Eleven years ago, in the *Archives Générales de Médecine*, M. Panas recorded a case of ulnar paralysis in one nerve supervening twelve years and a half after a fracture of the elbow on the same side. In the groove at the inner side of the elbow the ulnar nerve developed a fusiform swelling which led to the formation of a typical "main en griffe," interosseal atrophy, and disturbed sensations, with diminished tactile sensibility in the ulnar distribution. The symmetry of the peculiar affection described by Blocq is an additional feature of the disease, and, though it recalls diseases due to lesions about the lowest part of the brachial enlargement of the cord, still this symmetry alone cannot be taken as evidence of the situation of the lesion. For example, lead was long thought to exercise a special primary influence over the motor nerve-cells of the anterior cornua of the spinal cord, until it was proved that it had a great affinity for the distal extremities of these cornual cells, producing a peripheral neuritis rather than a myelitis.—*Lancet*, June 8, 1889.

Treatment of Amenorrhœa.—DR. NISALO, in the *Gazette de Gynécologie* for June, 1889, gives the following formulæ for the treatment of amenorrhœa:

R.—Decoction of barley . . ʒxiij.
Mucilage . . . . ʒv.
Water of ammonia . . gtt. xl.—M.

The above is for vaginal injection, and should be used four times daily, simultaneously the following should be given internally in three doses.

R.—Absinth water . . . ʒjv.
Syrup of saffron . . . ʒj.
Orange-flower water . . ʒss.
Castor oil }
Savine oil } . . . āā gtt. ij.—M.

Treatment of Senile Pruritus with Salicylic Preparations.—PROF. BESNIER, of Paris, advises the following treatment for senile pruritus: The entire body should be washed every evening with a quart of warm water, to which about two drachms of the following solution have been added:

R.—Carbolic acid . . . . . ʒj.
Aromatic vinegar . . . . fʒvij.—M.

Then either of the powders given below should be dusted over the body:

Salicylate of bismuth . . . ʒv.
Starch . . . . . ʒiij.—M.

or,

R.—Powdered salicylic acid . . . ʒiij.
Starch . . . . . ʒiij.—M.

Antipyrin in Diabetes.—At the last meeting of the Académie de Médecine of Paris, reported in part in the *Wiener klinische Wochenschrift*, May 30, 1889, DR. PANAS spoke of the beneficial results which he had observed to follow the use of antipyrin in diabetes. In several cases there was a complete disappearance of sugar from the urine after five or six days' treatment. Panas concludes that daily doses of forty-eight grains of antipyrin promptly check the formation of sugar.

Some authorities are of the opinion that the effects of antipyrin is only temporary. GERMAIN SÉE says that out of eighteen cases of diabetes in which he has tried the drug, he considers it most efficient in all cases in which there is no cachexia or tuberculosis and in which the quantity of sugar in the urine does not exceed two and a half or three ounces to the quart. Besides its action in reducing the quantity of sugar, it also relieves both the nervous and skin affections attending the disease. It has no beneficial effect upon albuminuria.

DR. A. ROBIN, of Paris, asserts that the use of antipyrin does away with the necessity for strict dietary measures. In cases in which it does not cause a rapid decrease in the quantity of sugar, Robin discontinues its use. He not only measures the daily percentage of sugar, but also the quantity and specific gravity of the urine. If the quantity decreases and the specific gravity remains stationary, he continues the use of the drug. In cases, however, in which its use causes a decrease in the quantity and an increase in the specific gravity, he considers its use most inadvisable. Albuminuria need not

be regarded as a contraindication for its use, although additional caution is advisable. If symptoms of weakness, loss of flesh, loss of appetite, pallor of face, oppression, etc., manifest themselves, the continuance of the drug will do more harm than good. Robin gives forty-eight grains *pro die* for ten or twelve days, but only thirty-two grains when albuminuria exists. He combines antipyrin with alkalies, preferably with bicarbonate of soda (one part of the latter to two of antipyrin), and gives four doses daily.

DUJARDIN-BEAUMETZ and WORMS both claim that antipyrin in conjunction with quinine, as well as with other antipyretics, speedily lessens the quantity of sugar in the urine of diabetics.

Methacetin, a New Antipyretic.—Methacetin is a derivative of amido-phenol; properly speaking, it is the methyl-ether of amido-phenol. The drug is a flaky powder, of a light-red color, odorless, and has a slight salty bitter taste. It melts at a temperature of 260° F., is soluble in cold water, but more quickly so in warm water, dissolves rapidly in alcohol. When given to animals in small doses it produces a rapid decrease of temperature, and also has a marked effect upon the nervous system. Fatal doses in rabbits were forty-seven grains. The urine contained no hæmoglobin. Experiments upon children show that small doses (three grains to four and a half grains) produce a considerable fall of temperature. Profuse perspiration frequently follows the use of the drug, and in one case collapse has been noted. Other accompanying symptoms have not been observed. The value of this new antipyretic is still undetermined.

Treatment of Chilblains.—The following formulæ, for the treatment of chilblains, are quoted from the *New York Medical Record* of June 8, 1889:

I. ℞.—Chloride meth. . . . ʒij.
Hydrochlorate of cocaine . grs. viij.
Compound camphor liniment ʒiij.
Soap liniment . . . ʒv.—M.

II. ℞.—Belladonna liniment . . ʒij.
Aconite liniment . . . ʒj.
Carbolic acid . . . ♏vj.
Flexile collodion . . . ℥j.—M.

III. ℞.—Castor oil, Flexile collodion, Spirits of turpentine } āā ʒjv.—M.

IV. ℞.—Spirits of camphor, Tincture of opium } āā ʒij.
Carbolic acid . . . grs. xl.
Alcohol . . . . ʒjv.
Water . . . . ʒjv.—M.

Cocaine Injections in Spastic Articulary Contractions.—In primary inflammatory contractions of the joints, in such cases, therefore, where a contraction of the joint has been the immediate result of an inflammatory irritation or an inflammation of such a part, DR. LORENZ, in the *Centralbl. für Chirurgie*, June 8, 1889, strongly advocates the use of cocaine injections at the seat of the contraction. For this purpose Lorenz uses a Pravaz syringe with a long needle and injects a half or even a whole syringeful of a ten per cent. solution of cocaine into the contracted joint. The injection is always immediately followed by a cessation of pain, and in a few minutes the limb may be extended, fixed in proper position, or extension applied. This treatment is particularly useful in the straightening of spastic flatfoot. Children endure cocaine very well; when used in adults great caution is necessary, and very small quantities of the drug will often have the desired effect. The injection should be performed under strict antiseptic precautions. At the Albert Clinic in Vienna, general anæsthesia is now never resorted to in correcting primary inflammatory contractions.

An Epidemic of Chorea.—Last summer, reports DR. LAQUER in the *Centralb. für Gynäkol.*, June 8, 1889, there was an epidemic of chorea in a girls' school in Schadenheim, Germany. The disease started in a girl who, two years previously, had had an attack of chorea minor. The symptoms constituted clonic muscular twitchings of the face, trembling of the arms, and hemiparesis of both upper and lower extremities. The epidemic lasted for over a year and a half; in all, sixteen children were affected; Laquer ascribes the symptoms of chorea manifested to an hysteric origin.

An Emmenagogue Pill.—The following emmenagogue pill is recommended by *L'Union Médicale*, June 6, 1889:

℞.—Powdered valerian, Powdered saffron } āā grs. xxxj.
Black oxide of iron . . ʒj.
Syrup of absinth and powdered gum . . . . . q. s.

Make into forty pills. At first one pill should be taken at every meal; later, the dose may be increased to two pills. The prescription is specially valuable in establishing normal catamenia in young chlorotic subjects.

The Mechanical Treatment of Erysipelas.—It is only fair to the profession that, when a new therapeutic method is being recommended, the author should take equal pains to record all cases in which his treatment has failed as well as those in which it has proved successful. With this honest end in view, DR. ANTON WÖLFLER, in the *Wiener klin. Wochenschr.* of June 6, 1889, after describing his method of treating erysipelas, starts out with reporting two cases in which the treatment was unsuccessful, but follows with the report of three successful cases.

Dr. Wölfler's mode of treatment is to outline the area of the disease with strips of sticking-plaster, and he has found that the disease will not overreach these limits. In a case of erysipelas following an ulcer of the arm, strips of plaster were placed about the wrist, and, as the subaxillary glands seemed already affected, the second strip was placed over the shoulder and along the sides of the thorax, and the limits were completed by a third strip at the waist. The disease progressed, accompanied with fever, until it had reached the sticking-plaster, but went no further, the fever ceased, and rapid healing followed. Another case recorded was that of erysipelas following a leg ulcer. Two bands of adhesive plaster were placed around the thigh. The disease quickly extended to the first band, and a very slight inflammation extended beyond it, but did not reach the second band.

So soon as the course of the disease was checked, fever disappeared and rapid healing followed. The third case was one of facial erysipelas. A strip of plaster around the neck quickly checked the progress of the disease, and cure followed. Of the two unsuccessful cases, the first was one of gangrenous erysipelas of the thigh and pelvis, and the patient was in a dying condition when brought under treatment. Death occurred in twenty-four hours. The second was a case of erysipelas of the chest following an operation for empyema, although the disease did not go beyond the limits of the plaster strips, yet the patient was so enfeebled death occurred three days after the commencement of the treatment. In the number of the above mentioned journal for June 14th, Wölfler reports seven additional cases, all of which resulted favorably. Three cases were erysipelas of the extremities and four were facial erysipelas, the latter being controlled by plaster bands around the neck.

A new Formula for the Administration of Cod-liver Oil.—The *Lyon Médical* gives a new method of administering this drug. Equal parts of the oil and lime-water are mixed, and a milky liquid is obtained, which has no odor and is of the consistency of syrup. It can be flavored if desired with a little essence of citron or vanilla. The oil, thus saponified, is most pleasant to take, does not adhere to the walls of the buccal cavity, and leaves no disagreeable after-taste. It can be given in cases with the most delicate stomach. The mixture keeps well.

A Case of Death following Suspension.—In the *Lyon Médical*, No. 20, we read of the following case of death following suspension, reported by DR. GORECKI. The patient was a man, aged forty, who for five years previously had been suffering from tabes, and who, after reading of the excellent results obtained by suspension, bought an apparatus. The disease had taken a very rapid course in him, paraplegia being almost complete. He was suspended two or three times daily by his man servant. The first seven suspensions were followed by most marked improvement, and the patient was able to walk a few steps. After the eighth suspension he suddenly lost the power of speech and hearing, his sight, however, being unaltered and no paralysis existing. Although active treatment was immediately resorted to, swallowing soon became impossible, sight was lost, and general paralysis quickly set in. The symptoms became more and more aggravated, and in twenty-four hours the patient was dead; the immediate cause of death being asphyxia.

Preventive Treatment of Megrim.—DR. HAMMERSCHLAG, says the *Weiner med. Presse*, June 2, has used the following formula in warding off attacks of megrim with great advantage. So far, it has not failed him in a single instance:

℞.—Citrate of caffeine . . . grs. xv.
Phenacetin . . . . grs. xxxj.
White sugar . . . . grs. xv.—M.

Make into ten powders in capsules. Sig. One capsule to be taken between the attacks.

Phenacetin alone is not so efficacious. The treatment may be continned until the attacks cease, which, however, will not be long.

Post-partum Irrigation with Hot Water.—The question of post-partum irrigation is one which has of late been widely discussed, but has by no means been definitely settled. Whilst, on the one hand, the majority of practitioners are in favor of this procedure, yet there are a vast number that maintain that it is valueless, and are especially opposed to the use of corrosive sublimate or carbolic solutions, this on account of their toxic properties. It has, however, been definitely proved that the lochia of healthy lying-in women does not contain either streptococci or other pyogenic bacteria. With this point in view, DR. DEIPSER, in the *Centr. für Gyn.*, June 1, 1889, strongly recommends the use of simple hot water douches. He claims that the temperature of the water which he uses is not conducive to the growth of germs, and even if all are not killed, the stream will wash them away, together with the blood-clots. Deipser lays particular stress upon the hemostatic properties of hot water. Nothing, he says, causes a more rapid contraction of the uterus. His method is to raise the back slightly, so as to facilitate the running off of the liquid, and the douche used is of a temperature of 122° F. As this heat will be unpleasant to the external organs, although well borne by the internal ones, Deipser suggests that the former be covered with a small quantity of vaseline. The quantity of the douche should be about one quart, and it should be undertaken as soon as the placenta has come away, and while the cervix is still open.

Eschscholtzia California.—The Eschscholtzia California is a shrub-like plant indigenous to North America and especially to California, where numerous varieties are found. A resinous, dark-green extract is obtained from the plant, which is entirely soluble in alcohol, soluble to a great extent in water, slightly so in glycerine, but insoluble in either chloroform or ether. The watery extract is of a red-brownish color and is soluble in water, alcohol, and glycerine, but not in ether or chloroform. BARDET and ADRIAN succeeded in isolating a base from the plant which they take to be morphia; an alkaloid was also obtainable in large quantities. The alcoholic extract was experimented with upon animals, and also tested in thirteen cases, and it proved itself to be a valuable and safe hypnotic and analgetic. The doses given varied from forty minims to two and a half fluidrachms. The following formulæ were found most agreeable:

I.

℞.—Alcoholic extract of eschscholtzia ♏xxx to ʒijss.
Rum
Simple syrup } . . . āā ʒj.—M.

II.

℞.—Alcoholic extract of eschscholtzia ʒvss.
Powdered liquorice root . . q. s.—M.

Make into forty pills. Sig. Five to ten pills daily.—*Deutsche med. Wochenschr.*, May 30, 1889.

Treatment of Habitual Constipation with Electricity.—DR. HAMMOND, says the *Revue de Thér. Médico-Chir.* of June 1, 1889, has successfully treated forty-one cases of habitual constipation with a galvanic current. The negative pole is placed in the anus, and the positive pole applied to the abdomen. Faradization was found useful in promoting a healthy tone of the muscles of the abdomen. In connection with the treatment, saline aperients should be administered.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, JULY 13, 1889.

EXTERNAL SOURCES OF INFECTION IN RELATION TO PREVENTIVE MEDICINE.

IT is the grand object of preventive medicine to investigate the conditions out of which diseases spring, and to endeavor to discover, so far as possible, how far they are removable and how far they are preventable. In this broad field of inquiry the science of bacteriology has yielded most valuable results. Through the exact methods of investigation which have been applied to the discovery of external morbific agents we are in possession of knowledge of the greatest advantage in forming a clearer conception of the causes of important infectious diseases, which knowledge is indispensable in selecting and applying the measures of prevention. Exactly what is the present state of our knowledge with respect to the external sources of infection in their bearing on preventive medicine is a question for profitable consideration. The profession is indebted to DR. WELCH for the able manner in which he has traversed this question in his Address in State Medicine, delivered before the American Medical Association at its recent meeting at Newport, and printed in this issue of THE NEWS.

It is not the purpose of Dr. Welch to enter into an elaborate discussion of the etiology of individual infectious diseases, but rather to consider "what *rôle*, in harboring and transporting infectious agents, may be played by those substances or media with which we necessarily come into intimate contact, such as the air, the ground, the water, and our food."

The air is a common medium for the transportation of infectious agents, but the danger from this source has been overestimated. Unlike the soil, the air does not form a resting or breeding-place for bacteria. Bacteria may adhere to particles of dust, but they do not exist to any great extent in the air in single detached particles. The air bacteria are derived from the ground, and in order to be taken up by the air they must first become dry. This fact is of great significance in the application of measures for the prevention of infection through this channel. The indications which it suggests are the necessity of guarding against the desiccation, when exposed to the air, of substances which contain infectious germs not destroyed by drying and free ventilation.

A most important source of external infection is the ground. Unlike the air, the ground is the resting or breeding-place of numerous forms of microorganisms, some of which are pathogenic. It is in the superficial layers of the soil that bacteria flourish. Among the pathogenic microörganisms which find their habitat in the ground, are the bacilli of malignant œdema and of tetanus. In favorable situations the bacillus of typhoid fever, of anthrax, and of cholera, may have their abiding-place there, and, under suitable conditions, multiplication of these germs may take place. The tubercle bacilli may also preserve their vitality in the soil for a long period under specially favorable conditions. The soil, however, is not a favorable breeding-place for most of the infectious bacteria.

Bacteria derived from the soil may be introduced into the body, conveyed on currents of air, only when the surface is dry. They may also be conveyed by means of vegetables, by the intervention of domestic animals, by the medium of flies and other insects, and in various other ways. The most important medium, however, is drinking-water, which becomes charged in various ways with these morbific agents.

In preventing infection, directly or indirectly, from the ground, it is of first importance to prevent the pollution of the soil by infectious substances. One means to this end is the adoption of a perfect system of drainage, whereby substances which favor the existence of infectious germs are kept out of the ground. Another means is thorough cleanliness about habitations. In cities, the proper paving of

the streets, absence of unnecessary disturbance of the soil, cleanliness of streets and spaces, and the laying of dust by sprinkling, are important in preventing infection from the ground and dust.

Another vehicle of infection is water. Bacteria abound in water, and even pathological bacteria may preserve their vitality for a length of time in this medium, if they do not actually multiply. So far as our knowledge goes, drinking-water is not a favorable breeding-place for pathological microörganisms. Still, there is no reason for rejecting the belief that both cholera and typhoid fever are conveyed by this medium. Infection from water is to be prevented by avoiding water suspected of infection. When this is not possible, the suspected water should be boiled. The only means of purification of surface water on a large scale is filtration. Domestic filtration is unsatisfactory, but filtration of the general supply, by means of large sand-filters, furnishes excellent results.

Still another medium of infection is our food. Many articles of food form excellent nutritive media for the growth of pathogenic microörganisms. Infection of food may be derived from deposits of dust, from earth, from water used in its preparation, and from contact in various other forms with infection. Milk is particularly liable to convey infection. There may be produced in it, as well as in other forms of food, by bacteria incapable of multiplying in the body, certain organic alkaloids, the so-called ptomaines, which produce poisoning and render the alimentary membrane more susceptible to infection by morbific organisms.

Articles of food may be primarily infected. For example, the milk from tuberculous cows and the flesh of animals infected with parasites. The measures of prevention are obvious. The cooking of food immediately before its use, the boiling of milk when the supply cannot be carefully controlled, and the application of efficient sanitary inspection of all food supplies, form the basis of preventive measures.

We have very hastily and imperfectly sketched the leading points in Dr. Welch's address, which is a fresh and instructive article, full of practical suggestions, and worthy of careful study.

OWING to a reduction in the appropriations, three of the National quarantine stations on the Atlantic coast, one in the Gulf and two on the Pacific coast, will be closed on the 1st of October. The governmental appropriation amounts to $50,000, and as this amount is insufficient to maintain all the stations now in operation throughout the year, two only will be kept open, namely, the one at San Francisco and one on the Gulf coast.

AT the recent annual meeting of the Rhode Island Medical Society, the following officers were elected for 1889–90:

President.—John W. Mitchell.

Vice-Presidents.—William H. Palmer, Robert F. Noyes.

Recording Secretary.—William R. White.

Corresponding Secretary.—George D. Hersey.

Treasurer.—George L. Collins.

Dr. G. L. Collins, Secretary of the Trustees of the Fiske Prize Fund, read the annual statement of the same.

A prize of $250 had been awarded to Dr. Charles V. Chapin, of Providence, for his essay bearing the motto "Their Poison is like the Poison of Serpents," the subject being "The Rôle of Ptomaines in Infectious Diseases."

For 1890 a prize of $300 is offered for the best essay on either of the following subjects:

1. Pathology, diagnosis, and treatment of intracranial tumors, with original observations.

2. How far can disease be prevented by science and legislation?

3. The surgical treatment of wounds and obstructions of the intestines.

THE *Lancet*, of June 29th, states that the University of Oxford, in recognition of his accomplishments in medical literature, and of important services otherwise rendered, is about to confer upon Dr. J. S. Billings, of the American Army, and now attached to the Surgeon-General's Office, Washington, the honorary degree of D.C.L.

DR. HENRY M. HURD, Superintendent of the State Hospital for the Insane at Pontiac, Michigan, has accepted the position of Superintendent of the Johns Hopkins Hospital at Baltimore.

A CONVICTION, under a new law in New York State prohibiting the selling of cigarettes to children under sixteen years of age, has been obtained. The offender was compelled to pay a fine of fifty dollars. This case may be appealed by the conjoint action of the dealers and manufacturers, but this conviction

will diminish to some extent the pernicious use of tobacco by young persons.

AN atrocious outrage upon a country physician was perpetrated on the night of July 1st, at a village called Pleasant Unity, in Westmoreland County, Pennsylvania. Dr. Lewis T. Smith, a graduate of Jefferson and a practitioner of excellent repute, was beaten and nearly murdered by three masked men, who aroused him at night on a pretence that one of them needed to have a tooth extracted. They gained access to the house in this manner, and proceeded to beat the inmates and to ransack the premises. They found money and valuables to the amount of five hundred dollars, which they took away with them, leaving the physician, to all appearances, dead. Dr. Smith's injuries did not prove fatal, but his condition is even yet most critical. There is some hope, however, that he may recover.

DR. STEPHEN WICKES, one of the oldest and most respected physicians in northern New Jersey, died on the 8th instant at his home in Orange, N. J.

Dr. Wickes was born in Jamaica, L. I., March 17, 1813. He was a descendant of Thomas Wickes of the Massachusetts Colony of 1635, his father being Col. Van Wyck Wickes. Having graduated from Union College in 1831, he became a student of the natural sciences at Rensselaer Polytechnic Institute in 1832, and of medicine at the University of Pennsylvania in 1833–34, and in the latter year was graduated from that institution. In 1835 he practised in New York, thence until 1852 in Troy, and from 1852 until February, 1886, in Orange. He was for twenty years an elder of the First Presbyterian Church.

Dr. Wickes will be best remembered by his literary work, to which he applied himself with great industry after his retirement from active practice. He edited the *Transactions of the Medical Society of New Jersey* from 1860 until 1882; also the old *Transactions* of the Society from 1766 till 1858. He published *Topography of Orange; Water Cure in Orange; Memoirs of Thomas W. Blatchford, M.D., of Troy, N. Y.; Living and Dying, their Physics and Psychics; History of Medicine in New Jersey; Sepulture, its History, Methods, and Requisites*, and *History of the Newark Mountains*.

DR. WILLIAM ELMER, an ex-President of the New Jersey State Medical Society, died at Bridgeton on the 26th of June, after an illness of several months, due to Bright's disease. He was the third of a line of physicians in the Elmer family. His grandfather, Dr. Jonathan Elmer, was also a President of his State Society in the year 1787, and in 1788 a United States Senator. Dr. William Elmer was educated at Princeton College, taking the salutatory oration at graduation. He took his M.D. at the University of Pennsylvania in 1836. After a year or more at Blockley, he settled down at Bridgeton in 1838, and rapidly succeeded in practice. He was a leader in medicine not only, but in charitable, educational, and religious organizations in the southern part of Jersey. In 1860 he was in the presidency of the State Society, and his age at death was nearly seventy-five years.

DR. PHILIP F. BRAKELY, who for forty years was the Secretary of the Medical Society of Warren County, New Jersey, died at his home in Belvidere, at the age of seventy-five years, on the 3d of July. He was a representative man in northern New Jersey, just as Dr. William Elmer, who died six days before him, was a most able standard-bearer in the southern section of the State. They both were graduates of the University of Pennsylvania, Dr. Brakely being of the class of 1842. He was early identified with the American Medical Association, and a permanent member of the State Society. His death has been ascribed to the infirmities of advancing age, culminating in cardiac syncope.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting, held at Newport, R. I., June 25, 26, 27, and 28, 1889.

(Specially reported for THE MEDICAL NEWS.)

SECTION OF SURGERY.

WEDNESDAY, JUNE 26, 1889.

DR. C. B. PORTER, of Boston, read a paper on

ECTROVERSION OF THE BLADDER.

He first reviewed the more important forms of ectroversion together with the leading operations that have been proposed for its relief. He then gave a history of several cases and reviewed the statistical history of the various operations. With regard to choice of operation, he thought age and the direction of the cleft were the chief factors. No operation has yet secured retention of urine. The operation is not a serious one. None of his four cases had died. Crudelli's operation promises nothing more than the flap-operation. The flaps must be taken from the middle and lateral portions of the

anterior abdominal wall and must be about a third larger than enough to cover the cleft. They must be so made as to secure free circulation of blood in them. Traction must not be made on them. All hemorrhage must be promptly arrested. If delay occurs in the operation, the field must be carefully covered with hot wet flannel. The operation should be made early and no fear need be entertained of closing the cleft. It has been successfully performed at as late an age as forty years. At the close of his paper he exhibited a case upon which he had operated, giving a complete history of the case and method pursued.

DR. W. T. BRIGGS, of Nashville, then read a paper on

THE CHOICE OF OPERATIONS FOR THE REMOVAL OF URINARY CALCULI.

He stated that there is no *best* operation; every case of calculus has its special indications, and the surgeon will have the best results who has the best knowledge of all methods of operating and can select the operation which is best adapted to the case. The age of the patient; the size and hardness of the stone; the frequency of recurrence; the condition of the urinary organs, and the results following different methods are the chief factors for the selection of a particular plan in any given case. The age of the patient is important. The average rate of mortality in children is generally given as one to sixteen. In his practice, seventy-one cases operated by the bilateral method resulted in recovery. He saw no benefit in the substitution of litholapaxy. In advanced age every method is more fatal owing to enfeebled strength and increased size of stone. He had, however, operated successfully on seven old men.

The character of the stone is an important factor in the choice of operation. If the stone is small crushing should be resorted to; but statistics show that return of the calculus is more frequent after crushing than after lithotomy. It is asserted that litholapaxy is more thorough in clearing the bladder of débris, but this has not been settled and cannot be definitely settled until more thoroughly reliable reports have been collected.

The state of the urethra, bladder, and kidneys must be determined. In considering the urethra, with a view to litholapaxy, it must be determined how far it will admit instruments. Every operator knows the damage that may be done by starting up inflammatory action in the urethra, and the method should be selected which is least likely to roughen or irritate that passage. The condition of the prostate gland must also receive the careful attention of the surgeon. As long as it is normal in condition and there is no enlargement of it to interfere with the introduction of instruments, the crushing operation may be selected; but if it is enlarged or if it is the seat of a tumor, the cutting operation must be resorted to. The bilateral incision in these cases is often followed by diminution of the size of the gland and a re-establishment of the power of micturition.

In diseased conditions of the bladder, the choice of operation must depend upon the extent of the pathological changes which are present in the viscus. If the condition is not excessive, crushing may be resorted to, with good prospect of good result; but if inflammation has been started, with diminution of the calibre of the bladder, cutting should be chosen, no matter how small or how soft the stone. When pathological changes in the kidney have made much progress, all operations are fraught with danger, and the surgeon should be content with making the last days of the patient as comfortable as possible. When all these things are negative, the environments of the patient should decide the choice of operation. The method should be the one which will best remove all distressing symptoms and render the patient most comfortable.

Of the cutting operations he preferred the medio-bilateral, because

1. It opens up the shortest and most direct route to the bladder; passing from a third of an inch anterior to the verge of the anus to the neck of the bladder, it facilitates the introduction of instruments and the extraction of the calculi.

2. It divides parts of the least importance. The incision following the median line does not encounter any structure of importance, nor does the slight bilateral section of the deeper parts do violence to tissues of vital consequence.

In adult life the death-rate alters somewhat in favor of litholapaxy. As the prostate and urethra enlarge and the parts about the neck of the bladder become more vascular, the danger incident to cutting through them increases. On the other hand, the increase of size makes the performance of litholapaxy comparatively easy and safe. In old age the dangers attending all the cutting operations have increased greatly, but the mortality after litholapaxy is very little higher than it is earlier in life.

The rule in childhood seems to be, litholapaxy for small and medium-sized stones; lateral lithotomy for all above this except for very large stones which must be extracted by the suprapubic operation.

The following conclusions were stated:

1. No operation is adapted to all cases.

2. Litholapaxy is incomparably superior to lithotrity and should always be practised in suitable cases.

3. The suprapubic operation should be chosen for the removal of very large and hard stones.

4. The medio-bilateral operation should be chosen in all other cases.

DR. A. T. CABOT, of Boston, then followed with a paper on

THE CHOICE OF OPERATION FOR STONE IN THE BLADDER.

He thought litholapaxy the choice of operation for stone in most cases. It was therefore his object to consider the objections which have been held against it and to enter upon the discussion of its strong points. German writers have objected that a certain amount of skill is requisite to the performance of the operation. It might be urged with equal propriety that any surgical procedure requires a certain amount of skill in operative procedures. In many of his arguments he coincided with the views expressed by Dr. Briggs. In speaking of the relative mortality of the operations he exhibited a table of statistics which he had prepared from the death-rates attending the methods of extraction. From it he concluded that in childhood there is little of choice between lateral lithotomy and litholapaxy. The death-rate in each is a little over three per cent. In adult life litholapaxy has a slightly lower death-rate than lithotomy. Suprapubic lithotomy keeps its place as a little

more dangerous operation. In old age the danger of cutting is greatly increased.

It is exceptional to see loss of function of any kind follow the cutting operations for stone; after litholapaxy no such loss should occur. The possibility of wounding the seminal ducts by incision through the floor should be considered. The lateral incision has the advantage that while giving more room for the extraction, it wounds at least only one duct. Incontinence is an occasional result of perineal sections owing to their interference with both sphincters of the bladder.

In conclusion, he said that in childhood the mortality after crushing is small; that of litholapaxy and lithotomy is about equal. The crushing operation has the advantage in that it does not wound any of the ducts or seminal vesicles, or rectum. The urethra and bladder of a child will tolerate a considerable amount of irritation. For stones too large for the crushing process, however, we must resort to bilateral lithotomy, and for those too large for this method to the suprapubic. Conjoined manipulation will generally enable us to determine the size of the stone. The character of the stone with regard to firmness may usually be determined by the sensation which it imparts to the sound.

Strictures have generally been named as a contra-indication to the operation of litholapaxy, but this is not usually the case, as the stricture will generally yield sufficiently to dilatation. Enlargement of the prostate may, however, render the operation dangerous.

DR. DUDLEY P. ALLEN, of Cleveland, read a paper on

LITHOLAPAXY IN CHILDREN.

The operation has, he said, come to be regarded as justifiable for the removal of calculi in children, and great results have been achieved by it. Lateral and suprapubic lithotomy have their fields of usefulness, and litholapaxy is rapidly becoming recognized as applicable to a certain class of cases. The essayist had received several letters from prominent foreign physicians expressing their views of the operation. G. Buckstone Brown, of London, and Guyon, of Paris, favored its use in children when suitable to the case. Petersen, of Kiel, Germany, and Kerr, of Canton, China, had not made use of the operation. Guyon considers the term litholapaxy a misnomer, since it presupposes the aspiration of the fragments to be the chief rôle.

The chief advantages claimed for the operation were:

1. The absence of a cutting operation, through the dread of which patients frequently delay operative measures until the stone has acquired a large size.

2. The short convalescence, averaging but a few days.

3. The absence of offensive discharge of urine into the bed and over the thighs of the patient, often producing very annoying and even dangerous consequences. The suffering is commonly very slight and confined to a few days. Patients will not hesitate so long before consenting to its being made, and even should recurrence be more frequent than after lithotomy, the secondary operation is much less to be feared, and of much less serious character. A boy's bladder is more likely to be suitable for the operation than is the bladder of an adult. Finally, the operation is especially adapted to the extraction of medium and small-sized stones. It is important that the instrument be as large as will be admitted, and that it be of good manufacture. The fragments should be removed with the fewest possible insertions of the evacuator. In conclusion, he expressed preference for suprapubic lithotomy for great and hard stones, but an operator of skill in litholapaxy would do well to choose it for those of small size.

DR. J. W. S. GOULEY, of New York, read a paper on

THE CHOICE OF TREATMENT OF URINARY CONCRETIONS.

Owing to the lateness of the hour, he omitted all that portion of his paper which referred to lithotomy. He described the various forms and methods of lithotrity. The operation was admissible where the stone was free and friable and of small size. It may sometimes be done in cases of large stone, or in cases of multiple stone. The urethra must be large enough, and the bladder must be tolerant of operative measures. It is not always applicable to cases of tumor at the neck of the bladder. Advanced disease of the bladder, kidneys, or urethra, contraindicates both lithotomy and lithotrity. In some cases a single operation occupying only two minutes was sufficient. Repeated short sittings he considered greatly preferable to a single prolonged sitting, on account of their less harmful effect on the mucous membrane of the bladder, and the less danger from the use of anæsthetics. Lithotrity at one prolonged sitting cannot with prudence be generalized. There are, however, surgeons who still prefer the operation at one sitting, notwithstanding the fact that the dangers are so much greater.

Litholapaxy is no longer a novelty, and may now be estimated at its right value. The great expectations of its advocates have not been realized, for they have discovered that the operation cannot always be terminated at one sitting; that it is not applicable to many cases complicated by urethral obstruction. They have found that in too many cases the injury to the bladder has led to cystitis and prolonged suffering.

Respecting lithotrity in children, he remarked that very little could be said. Several operators have performed the operation, and the conclusion was that it should be reserved for cases of small stone, in which the operation could be completed at one sitting. In cases where the stone is small and friable, weighing only a few grains, lithotrity is justifiable, but lithotomy is surely the safer operation in such cases. He concluded with the statement that the proper treatment of urinary concretions can be drawn only from a proper study of each case and of each method, there being no general rule as to the method that shall be employed in every case.

SIR JAMES GRANT, of Ottawa, said that stone in the vicinity of his residence was not of common occurrence, but he had operated a number of times. He very much preferred the bilateral method of operation to any other procedure. His operations had generally been performed in that way, and it was very seldom that he adopted crushing. He thought that the deductions of Professor Gouley embraced a large amount of good common sense. The difficulties attending lithotrity and its dangers are very great indeed. Unless it can be brought down to an exact measure, and unless it can be completed at one sitting, as in the case of small stones, it ought hardly to be performed at all. Not long ago he had met one of the most interesting cases he had ever encountered. He had a patient who had suffered from stricture, followed by fistulous openings through the perineum. Erysipelas set in, and a considerable portion of the tissue had

sloughed away. Retention and extravasation of urine ensued. He made an extensive incision, permitting the retained urine to escape freely. After a few days the slough separated, leaving an opening three-fourths of an inch in length in the membranous portion of the urethra. After applying large poultices, he observed that the granulations which sprung up were very extensive and pouting. He then thought that he would try the experiment of introducing the catheter into the bladder. In this he was unexpectedly fortunate, the instrument passing readily. Securing the catheter to the edge of the orifice, he retained it there three days, and treated the granulations with nitrate of silver. As a result he secured complete closure of the opening, and the patient was in a few days able to urinate *per vias naturales*. Systematic dilatation of the urethra was practised for a long time. An operation had subsequently to be performed, but the patient is now well.

DR. TREMAINE expressed satisfaction at the great progress which had been made in the last few years by suprapubic lithotomy. Five years ago, he said, this operation would not have been mentioned in the discussion of this question. To-day it had been named as an operation justifiable in certain cases by every speaker. He then reviewed the dangers which accompany the cutting operations for stone which reach the bladder through the perineum. One of the most important, and one which is too often entirely disregarded, he said, was that of impotence. As evidence of this he referred to eighteen cases of stone, all in young boys, which had been operated upon by a surgeon in Pottsville, Pa. The subjects of the operation have all since grown up, have married, and but one of them has become a father. While there were many other ways of explaining sterility, he thought that under the circumstances so large a number of successive cases argued strongly for its being due to the operation.

DR. GOULEY, in reply to an inquiry, stated that he thought the irritation of the bladder by the fragments of stone, which are likely to be left after crushing, is greatly exaggerated; that the fragments of the worst forms of stone, the pure uric acid calculi, the oxalate of lime stones, etc., do less harm than we are asked to believe. After a stone has been properly crushed—one of the worst forms of stone—it is broken into several fragments. The fragments cause some vesical irritation, no hemorrhage, no ulceration, unless they have been considerably disturbed after the operation. The result is a copious discharge of mucus from the mis-called mucous membrane of the bladder. This mucus very soon adheres to the stones and gives them a thick coating by which they are enabled to slip into the urethra and be discharged through it; so that the bugbear of angular fragments after crushing should not be thought of. Uric acid calculi pass very readily, as has been said, after repeated injections of alkaline fluids. They may sometimes be crushed by the finger in the rectum, a very old method of procedure for the extraction of stone.

DR. R. T. MORRIS, of New York, then read a paper entitled

WHAT DRESSING SHALL LIE NEXT TO THE WOUND?

In bringing the subject before the Section he stated that it was his desire to call attention to a point which is not mentioned by authors. What he would have to say applied alike to fresh wounds and to those undergoing repair and on which a bulky dressing could be placed. He did not doubt that his hearers all used the common antiseptic methods of dressing these wounds. The commonly used dressing of vaseline on any textile fabric was the worst form of dressing that could be applied to a granulating surface. The reason for this assertion was the fact that vaseline or any oil coming into contact with lymph prevents its coagulation, keeps the wound moist and favors decomposition and the growth of organisms. Second, when granulation cells are projected into the lymph they come into contact with the textile fabric and are projected into it. Lint and cotton dressings are even worse than textile fabrics. The perfect type of dressing on a fresh wound would be the same as that on a wound undergoing repair. Suppose that we have a wound that is undergoing repair: if we apply to it a dressing composed of any textile fabric, the connective tissue corpuscles and epithelial cells which form over it shoot up into the fibres of the textile fabric; if then for any reason the dressing has to be removed, we remove with it a large part of the new tissue, and thus the repair which has taken place is in a great measure destroyed. We must, therefore, use in these dressings some fabric which is not textile. Gutta-percha tissue will not altogether fulfil the requirements. Further than this, the moisture which collects under gutta-percha tissue has a disintegrating effect on the granulations and prevents their organization.

Lister's protective oiled silk is the only thing which can be applied to a wound without preventing its repair. The speaker went on so far as to affirm that if we have a blood-clot two inches in length by the same width covered by such a dressing, if fermentation does not occur, and if it is not injured in any way, it will become replaced by fibrous tissue. In large granulating surfaces we should first render the surface entirely aseptic by means of a ten to fifteen volume solution of peroxide of hydrogen; then apply immediately the protective oiled silk. Over this we may apply any absorbent dressing we may desire, absorbent cotton, etc.

DR. H. O. MARCY, of Boston, thought that while there was a great deal of value in what the last speaker had said, he did not think that it applied to operative wounds. He had of late applied no dressing at all after operations, simply closing the wound, drying the skin and applying over it a little iodoform with a few fibres of cotton over it to strengthen the dressing. In this way nature is left entirely to herself and agglutination goes on rapidly. He did not now use drainage tubes as he formerly did.

EVENING SESSION.

DR. J. COLLINS WARREN, of Boston, read a paper on

THE MANAGEMENT AND TREATMENT OF LARGE HERNIÆ.

He said that the large herniæ seem to have a *raison d'être*. In other words, the subject of the hernia usually suffers from some form of disability which prevents him from exercising that control over the hernial tumor which an intelligent and able-bodied person would exercise. In a large proportion of cases, particularly in women, obesity is a strongly predisposing cause. In the male, the subject is either a large middle-aged business man, so absorbed in his work, or of so callous a temperament as to

have neglected his disease until compelled to seek treatment through fear of permanent disability; or he is an old and feeble individual, or so obese as to be unable to effect a reduction of the tumor by manipulation, and to retain it in place by the proper application of a truss. We find large herniæ in children whose position in the social scale is so low that they cannot receive proper care. He narrated several cases illustrating each of the forms of cause referred to. In each case he had applied the treatment which the nature of the case seemed to demand. In none of the reported cases had a radical cure been effected, but the comfort of the patients had been secured.

DR. HENRY O. MARCY, of Boston, then read a paper on

THE RADICAL CURE OF HERNIA BY THE USE OF THE BURIED ANIMAL SUTURE.

Fourteen cases operated upon within the last eight months and illustrating every variety of hernia, and the essayist's methods of operating, furnished the text for this paper. Specimens of hernial sac were exhibited to demonstrate the changes which take place in the peritoneal layer. In old large herniæ the peritoneum was found so thickened and so blended with the surrounding cellular tissue as to be distinctly pathological and utterly devoid of value as an aid in the restoration of the protruded parts. He thought it clearly the duty of the surgeon to remove tissue thus changed. The operation performed by the speaker consisted in dissecting up the sac quite within the ring; then making the neck tense by traction, passing through it a double continuous suture, in the line of the oblique opening across the ring, and resecting the portion of the sac thus separated. The stump is then carried up within the internal ring which, in large and old herniæ, is almost completely closed from below upward by a double suture. In this manner the obliquity of the canal is restored, a point which the speaker considered of the utmost importance. The pillars of the ring are then brought together by a continuous suture extending to the outer margin of the external ring and encroaching closely upon the cord. The overlying tissues, and, finally, the skin, are approximated in the same manner, with a buried animal suture. This is accomplished by means of a running blind stitch connecting the deeper layers of the skin. By this means the essayist claimed the ring is restored, the tissues are held in proper relation, bleeding prevented, and no pockets allowed to remain for the accumulation of secreted fluids. Drainage is, therefore, unnecessary, and the wound after thorough irrigation with bichloride solution is dried and at once closed with iodoform-collodion. Repair goes on without pain, swelling, or even tenderness; opiates are rarely required. The speaker had operated about one hundred times for the relief of hernia, with, so far as he could determine by a recent examination of the traceable cases, about ninety per cent. of cures. The operation he considered without danger except in cases complicated by strangulation, where the integrity of the intestine has been impaired.

He expressed the belief that he had been the first American pupil of Mr. Lister. Soon after his return from Edinburgh he operated on a case, closing the ring in the manner described, because the patient was afflicted with a cough. The result was permanent cure of the hernia. The operation was soon repeated upon others. Being successful he began a careful comparative study of the behavior of animal ligatures incorporated in the living tissues, and found that they were replaced by vitalized connective-tissue cells. His discovery, the priority of which has never been questioned, he considered of paramount importance in all operative procedures, but particularly so in those for the relief of hernia. The essayist expressed his preference for sutures made from the tendon of the kangaroo's tail.

DR. JOHN B. DEAVER, of Philadelphia, under the title of

THE RADICAL CURE OF HERNIA,

described the various operations which have been proposed, including those of Macewen, McBurney, Baker, and Banks. From these he had devised an operation based chiefly upon that of McBurney, and differing from it chiefly in the fact that he permits the fundus of the sac to remain *in situ*. He preferred antiseptic silk sutures.

DR. CHARLES W. DULLES read a paper on

PROPERITONEAL HERNIA.

This, he said, is a subject but little understood in America, but three cases having been reported. One of these was his own, published in 1886, the second by Dr. Hartley, of New York, and the third by Dr. Torrey, of Brooklyn. A properitoneal hernia he described as one occupying an abnormal position within the abdominal or pelvic wall and in front of the peritoneum. In a true properitoneal hernia the tumor lies between the peritoneum and the overlying muscles, if abdominal, or between the peritoneum and the bones, if pelvic. There is also a form of hernia in which the protrusion occurs between the planes of the abdominal muscles, and another in which it lies outside of the muscles and just beneath the skin and superficial fascia. These cases are, for the most part, inguinal hernias in their inception, and are often accompanied by a testicle which had not descended. The obstruction offered by a truss, or the incarcerated testicle at some later period, causes the protrusion to be forced, under a strain, into one of the unusual directions described. Their position is usually above and parallel to Poupart's ligament, and they frequently lead to the production of a hydrocele of the cord. They sometimes become so large as to protrude beyond the ligament and to become pendulous, or extend upward and outward as far as the anterior superior spine of the ilium. Although the essayist had found the record of a case successfully treated by taxis, he considered this the most dangerous method of treatment, and preferred the cutting operation.

THURSDAY, JUNE 27TH.

DR. THOMAS K. MORTON, of Philadelphia, presented

SOME FURTHER CONSIDERATIONS AND STATISTICS OF ABDOMINAL SECTION FOR TRAUMATISM.

He considered of paramount importance the irrigation of the peritoneal cavity. Where there has been extravasation of the contents of the intestine into the peritoneum, irrigation and drainage are the two life-saving factors in closing this operation. The irrigation cannot be too copious; the water should be hot and plenty. If there are perforating wounds of the liver, spleen, kidneys, they should also be irrigated. A glass tube carried down into the wound in the organ would be an advantage. Washing out the stomach is often advisable, especially if the

wound has been received after copious eating and drinking, as is often the case. Rectal alimentation is important in cases where extensive repair of the intestine has been made. He then reported 110 cases which he had collected, with a mortality of 62, all but 16 of them being American. Four times the abdomen had been opened for gunshot wound, where no wound of consequence was found. All recovered. The statistics showed slightly better results for American operations than for foreign, because, as he thought, the operation is performed earlier in America than abroad. The essayist also recommended the use of hydrogen gas for the detection of wounds of the bladder in much the same manner as it is used by Senn for the discovery of perforations of the intestine.

DR. JOSEPH T. PRICE, of Philadelphia, then read a paper on

PELVIC SURGERY BY ABDOMINAL SECTION—ITS PAST, PRESENT, AND FUTURE.

Reference was first made to the early history of abdominal and pelvic surgery and the opposition which they encountered. He strongly favored thorough cleanliness in operations without the aid of any chemicals. Listerism has wrought death by means of chemicals instead of dirt. Delay is not conservatism. He referred also to the former custom of preparing a large collection of instruments for the operation of laparotomy, and the present small number that is considered necessary. Everything is now done to gain cleanliness and speed. The drainage tube, in itself an advance, has now given place to flushing by means of the gravity tube, and the speaker could not too strongly recommend its use. Hemorrhage from faulty tying of the pedicle is a great cause of death after the operation of ovariotomy. Investigation has led to the adoption of animal ligatures.

The treatment of incipient peritonitis is now the use of saline purgatives, or, if they are not well borne, small doses of calomel. Experience has shown that a violent peritonitis, almost or quite general, will yield to this treatment, even though the disease be due to septic cause. The opium treatment can give no such showing as this. The discovery of the dependence of pyosalpinx upon gonorrhœa has given to the latter disease in the female an importance which it never before had. From being looked upon as a trifling malady, it is known to be the cause of the worst form of disease to which the female is liable.

If there is any better treatment of pelvic troubles than the knife, we should look to it with pleasure. The essayist had not, however, much faith in electricity. It has been applied and lauded as a specific for almost every disease in nosology, but the results obtained from it are by no means so gratifying as promised. The essayist did not believe that one-fourth of the reported cases of its successful use as a fœticide had been cases of extra-uterine pregnancy, and many of them, he thought, were not even pregnancy of any form.

DR. J. M. BALDY, of Philadelphia, read a paper on

PERITONITIS.

He first referred to the inaccuracy of early statistics in reference to peritonitis. No safe deductions, he said, can be drawn from the records of post-mortem examinations in this disease more than a quarter of a century ago. With reference to the origin of the disease there was not a unanimity of opinion. That it was never of idiopathic development he was not ready to assert, but he could safely declare that every case that had come under his own observation had been of traumatic origin. The only way in which opium could hold its place in the reputation it had gained in the treatment of peritonitis was on the supposition that it was of idiopathic origin. In the treatment of the disease he recommended drainage and depletion. Our best channel for depletion is through the alimentary canal, and the best method of securing it is by means of large doses of saline cathartics. Reference was also made to the case of Dr. Wiltshire, who, in 1878, deliberately opened the peritoneal cavity in an acute peritonitis, found a strangulated bowel, relieved it, and saved his patient. Such should be the course of treatment whenever possible. If it is a diseased appendix, cut down and remove it as quickly as you would if it were a diseased Fallopian tube. If this method is not followed the patient is sure to die from the peritonitis. The operation should be made whether pus exists or not. Laparotomy is the only hope in such cases. The tubercular form of peritonitis is no exception to the rule, and it is being demonstrated daily that many patients live on for years after the operation. The time may come, as was surmised by Flint, when laparotomy will be as applicable to the treatment of purulent disease of the abdominal cavity as is thoracentesis, the injection of fluid, and thorough irrigation for pyothorax. The time has come!

DR. N. B. CARSON, of St. Louis, then read a paper on

CHYLOUS CYST OF THE MESENTERY, WITH REPORT OF A CASE.

The case to be reported was the only one found in American literature, and up to the present time the largest cyst of the character on record. He first saw the patient about three years ago, had him under observation for three months, then lost sight of him, and did not again see him until five months ago. The history given was about as follows:

Male, aged thirty-nine, phlegmatic temperament, medium height, slight build, well-nourished, weight about one hundred and fifty pounds. Father and mother living; family history good. At twenty-four years of age he had chills; at thirty-four, typhoid fever; and more recently a malarial attack, when his weight was reduced from his former standard—one hundred and sixty-five—to one hundred and fifty. On examination he found a tumor, the size of a fœtal head, midway between the umbilicus and pubes and in the median line. He diagnosticated it a mesenteric cyst. He made an exploratory puncture, and withdrew several ounces of a milky-white fluid. Upon this discovery he altered the diagnosis to "cyst of the receptaculum chyli." During the three months which succeeded upon the aspiration of the tumor the cyst did not fill up. Five months ago, however, he was sent for, and found that the cyst had rapidly filled, and had of late given him much annoyance. The patient's general health had been good, his weight one hundred and fifty pounds, and the only alteration perceptible in the tumor had been in its size.

On March 3d, the tumor was removed by laparotomy. Five pounds of fluid were first withdrawn; the peritoneal surfaces were then stitched together, the cavity filled

with iodoform gauze, the edges brought together, and the abdominal cavity closed.

Examination of the fluid showed its specific gravity 1014; reaction alkaline. There was present albumin but no fibrin, large granular cells with fatty protoplasm. The chief anatomical elements consisted in minute fat granules resembling those of milk and crystals of chloride of sodium in great numbers. The fluid two months after the operation showed no signs of putrefaction. The walls of the cyst were hard, rough, and free from inflammation.

In conclusion, the author reviewed what is known of the pathology of the disease. He advised the removal of the cyst as soon as it begins to interfere with the movements of the patient or to injure his health. In most cases cure can be effected by incision and removal of the cyst.

DR. MORRIS hoped that he was incorrect in understanding Dr. Price to say that he did not use antiseptics. He was aware that Wegner has shown that disinfectants are not ordinarily necessary within the peritoneal cavity. The lymphatics are ordinarily capable of picking up and carrying away all septic matter. Tait says that he accomplishes by hydragogue catharsis what Heath and others accomplish by drainage.

He thought the only occasion for using drainage in the abdominal cavity is where pus is present.

DR. MANLEY, of New York, took a less extreme view of the treatment by purgation. He thought that the bowels should not be permitted to become locked up, but he preferred action upon them by means of enemata to that by purgation from above. Opium must not, however, be too quickly laid aside, for there is no pain which kills more quickly than pain in the abdomen, neither must we too indiscriminately open the abdominal cavity. Opening the abdomen of a man, whose respiratory action is abdominal, is altogether different from opening the abdomen of a woman, and the result is very apt to be different. In a woman everything favors repair, but in a man it is almost impossible to hold the respiratory muscles quiet.

DR. I. N. QUIMBY, of Jersey City, thought free purgation dangerous and asserted that the best results he had been able to obtain were from the free use of opium, preceded by leeches and poultices to subdue the inflammatory action. After this it is proper to get up free purgation. We must resort to the use of the knife cautiously.

DR. JOHN B. DEAVER, of Philadelphia, stated that he had seen several cases in which operation had been performed with the recovery of the patient. He had also read of a great many cases of peritonitis which had recovered without operation, but he did not believe that half of such cases were peritonitis at all.

DR. PRICE, in closing the discussion, said that many cases which are operated upon died, for the simple reason that the operation is resorted to for the purpose of doing an ideal operation, and upon a patient when in a dying condition. The value of purgation in abdominal surgery is vastly more before the operation than after it. It is difficult to use purgatives after the prolonged use of anæsthetics. We have also in just that class of cases an ether mortality, due to the prolonged anæsthesia. There is another class of cases that die from ether which would die without it. The peritoneum will not tolerate dirt or filth of any kind. Mr. Tait minimizes everything about abdominal surgery; he makes the shortest incision through the shortest course as quickly as possible.

DR. ADDINELL HEWSON, of Philadelphia, in a paper entitled

THE USE TWENTY-FIVE YEARS AGO OF POLARITY FOR LOCATING THE WHEREABOUTS OF A LEADEN BULLET DEEPLY EMBEDDED IN THE BODY,

narrated the case of an army officer treated by him in 1863, in which he had located by means of a small compass worn as a watch charm, the bullet embedded in the tissues at a depth of two inches.

DR. THOMAS H. MANLEY, of New York, reported

A UNIQUE CASE OF FRACTURED EXOSTOSIS OF PUBIS.

The case was that of an Italian, nineteen years of age and a resident of the United States for two years. He complained of occasional severe pain in one leg, and was for some time treated for rheumatism, without benefit. Finally he became so accustomed to the pain that he gave it little thought and continued to work regardless of it. One day while employed, he suddenly became weak; the weakness was followed by a chill, and he was taken home. When admitted, two weeks after, he was very weak, had a temperature of 101° F. and a pulse rate of 120 per minute. No organic disease was discovered. The left leg was very much swollen from Poupart's ligament to the knee. An accumulation of pus was diagnosticated in the region of the pubis, and an incision was made for the purpose of evacuating it. A large exostosis was discovered. An operation was then performed for its removal but although the operation was successful, the patient died a short time afterward. Examination of the exostosis removed showed that it was a reduplication of the pubic bone, and that it had been attached to the latter at one extremity. It was in size about four inches long by half as wide.

DR. ROBERT NEWMAN, of New York, next read a paper on

ELECTROLYSIS IN THE TREATMENT OF STRICTURE OF THE RECTUM.

In introduction he stated that he had prepared with great care a paper on this subject which was entirely too long to read *in toto*. He had fourteen cases to report. In 1871 he had made his first operation for stricture of the rectum by electrolysis on a case complicated by five fistulæ. The operation was a complete success. Several years after, the patient dying of another disease, he secured a post-mortem and found that the stricture had not returned. One important feature of this operation was the use in the rectum of a bullet-pointed electrode. In speaking of the disease under consideration, he stated that females are more liable to have stricture of the rectum than are males. The stricture age is between thirty and forty; the youngest of his cases was twenty-four, the oldest sixty-two. Eight cases were single strictures, four multiple, one had three and one had four strictures. The duration of the disease was from six months to twenty years. The causes were various. Constipation was a great cause; other causes were tuberculosis and syphilis. One case was complicated by five fistulæ; only a few cases had had any previous

treatment; only two had had medical treatment, the others surgical. Six had been operated upon with the knife. In none of the cases had the previous treatment been beneficial; some proved to have been entire failures. It must be admitted by the most sanguine operator that proctatotomy must be followed by the use of the bougie at regular intervals. The best results in the treatment of rectal strictures were obtained from the use of the same method as would be employed in the treatment of urethral strictures, except that a stronger current may be used and the sittings may be more frequent. While in the urethra five milliampères would be sufficient, fifteen milliampères may be used in the rectum. The treatment may last fifteen or twenty minutes, and the sitting should be once in every four days.

Among the conclusions arrived at by the author, the following were stated:

Electrolysis in the treatment of strictures of the rectum is not a panacea; on the contrary, failures may happen, and probably ultimately will happen in the strictures due to carcinoma.

Electrolysis will commonly cure rectal stricture when all other methods have failed.

Electrolysis will cure a certain percentage of cases without relapse better than other modes of treatment, and without the necessity of after-treatment or the use of bougies.

The best chances of cure are in cases of fibrous inflammatory stricture.

The best method of treatment is with the metallic bullet electrode as negative pole, a weak current, and treatment every four days.

DR. MEYER, of New York, spoke of the objections that have been urged against electrolysis by some eminent men. He had, however, seen several cases successfully treated by Dr. Newman. One case in particular he recollected; a case of carcinoma that was kept in a condition of comfort for several months by means of his treatment.

FRIDAY, JUNE 28TH.

DR. CHARLES DENISON, of Denver, Col., described

A NEW RIB CUTTER, AND A CASE OF RESECTION OF RIBS FOR DRAINAGE OF A PULMONARY CAVITY.

He reported a case of croupous pneumouia with all the typical symptoms, crisis occurring on the sixth day, but normal resolution not taking place. During the following summer the patient had chills, fever, and night-sweats. The evidences of a cavity in the lung were soon developed, a cracked-pot sound on percussion, cavernous and broncho-vesicular respiration. The sixth and seventh ribs were resected, four ounces of pus evacuated, a rubber drainage tube inserted, and injections of a ten per cent. mixture of salol in liquid vaseline made twice daily. The improvement was rapid and pronounced, the chest expanding, the fever subsiding, and, finally, the expectoration subsiding. In the operation he used a peculiar pattern of rib-cutter devised by himself. Owing to the collapse of the chest-wall which had occurred, he found the ribs so close together that it was almost impossible to insert any of the known bone-cutters. He, therefore, had the instrument made which he exhibited. It combined a periosteum separator and a rib-cutter in such a manner that the point could with ease be forced between ribs lying in contact or overlapping each other and be made to separate the periosteum from the bone for any desired distance, although the opening through the skin had been but a small one. A mechanical joint was so fitted to the jaws of the instrument that the cutting blade could be closed with such force as easily to sever a rib of beef and sticks of wood of considerable thickness, as demonstrated by the author.

DR. J. O. WHITNEY, of Pawtucket, R. I., asked, Is every case of empyema to be treated by exsection of ribs, or by incision between the ribs? Is it necessary in every case to make so radical an operation? He had operated by simple incision, putting in a silver tube, but he found that owing to collapse of the ribs there was soon considerable pain. He suggested the possibility that an instrument which would saw the rib instead of cutting it, if it could be devised would be preferable to the one presented by the essayist.

DR. MCCOMAS, of Deer Park, reported a case in which he had resorted to repeated aspirations of the chest without benefit. An incision was subsequently made, the chest cavity washed out with a solution of chlorate of potash and boric acid, a drainage tube inserted, compound tincture of iodine injected and retained until severe dyspnœa was produced, then let out and the patient made a good recovery.

DR. J. B. HOPKINS, of Philadelphia, then read a paper on the

ABSORPTION OF A STERILIZED DEAD-BONE DOWEL.

The paper consisted of a microscopic study of the phenomena witnessed during the process of absorption of a dead-bone dowel-pin firmly driven into the femur of a dog. As a result of the study, he arrived at the following conclusions: Where sterilized dead bone is placed in contact with living bone, under favorable circumstances, it undergoes absorption; when placed in contact with periosteum, it undergoes organization. These processess go on most actively between the fifth and eighth weeks, and are not associated with inflammatory action. Where these bone dowel-pins are used for any mechanical purpose in surgery, they may be relied upon for a period of a month or six weeks. After this, their services being no longer necessary, they gradually disappear.

DR. MCCOMAS reported the case of a young lady whose arm had been amputated when she was a child of about four years. He stated that four inches of new bone had grown from the stump, and that the new growth is covered by only a thin layer of skin of a bluish cicatricial character, very sensitive. He expected soon to amputate it.

DR. HOPKINS then closed the discussion by reporting a case in which a small portion of the head of the humerus had been retained in an ampuation and had proved of great advantage, chiefly in preventing the deformity which is usually so marked after shoulder-joint amputations.

DR. J. G. CARPENTER, of Stanford, Ky., read a paper on

THE PATHOLOGY AND TREATMENT OF CHRONIC SCIATICA.

In it the author discussed in a very complete manner the various theories as to the production of neuralgia of this nerve, and the *rationale* of the several methods of

treatment, especially of that by nerve-stretching. The various steps of the latter operation were also described in detail. He considered systematic massage as of the greatest importance in the treatment of most cases of sciatica.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, June 4, 1889.

THE PRESIDENT, GEORGE W. JACOBY, M.D., IN THE CHAIR.

DR. W. P. WILKIN reported a case of

ALCOHOLIC PARALYSIS WITH CENTRAL LESIONS,

and exhibited microscopic sections of the cord. The patient was a female, aged thirty-one, and died after four days' stay in Bellevue Hospital with acute alcoholism and alcoholic paraplegia. At the autopsy the liver was found to be fatty and much enlarged, weighing eight to ten pounds; kidneys large, cortex thickened and markings indistinct; brain showed much extravasation around the bloodvessels. There was a leptomeningitis about the spinal cord, especially marked over the posterior part, and involving the posterior nerve-roots. Degenerative changes found in the posterior columns, most marked near the periphery. The interstitial increase was not confined to one system of fibres; it extended to a less degree through the lateral columns of the cord. In the sciatic and tibial nerves considerable increase of interstitial tissue, and in some places a disappearance of axis-cylinders. This case was presented as one of ascending degenerative changes, and as showing that alcoholic paralysis may involve lesions not of the periphery only, but also of the central nervous system. He referred to other cases corroborative of this statement.

DR. DANA then exhibited a case of

SEPTIC PERIPHERAL NEURITIS DUE TO PYELO-NEPHRITIS,

with the following history: John L., aged twenty-one, was admitted to hospital Dec. 13, 1888, with symptoms of acute articular rheumatism affecting all extremities. There was no history of alcoholism or venereal disease. There were pus and albumin in the urine, continuing five weeks. In the middle of January paralysis came on, the rheumatism abating. There were anæsthesia and burning pains. The nerves affected were the ulnar and median of both arms, and the anterior tibial of both legs. Atrophy and degenerative reaction appeared. Improvement began about March 16. Electrical reactions taken in April, 1889, showed complete degenerative reaction in flexors of the right arm and partial in those of the left. Patient is now improving very slowly, but there is still sensory and motor paralysis of arms. He regarded the articular affection as a pseudo-rheumatic disorder due to septicæmia. It had not responded to the usual rheumatic remedies.

DR. SACHS said that if there were any question as to the diagnosis of the nervous affection it would lie between peripheral neuritis and atrophy following joint lesions. But the anæsthesia in this case was conclusive in corroborating Dr. Dana's diagnosis.

DR. JACOBY then read a paper entitled

PERIPHERAL PARALYSIS DUE TO CARBONIC OXIDE POISONING,

in which he reported two cases—one of poisoning by coal gas, the other by illuminating gas. The former contains about six per cent., and the latter eight to ten per cent., of carbonic oxide. The action of this agent on the body is twofold—upon the blood and upon the nervous system. The symptoms of its effect upon the nervous system, as variously reported, had been a burning sensation and reddening of the face, dizziness, tinnitus, headache, nausea, vomiting, unconsciousness, tonic and clonic spasms, involuntary passage of urine, feces, and semen, complete paralysis, coma, and death. In some cases excentric pains in the extremities, as well as sensory disorders of the skin, have been noted. Local or general anæsthesia of the skin has been observed in some cases that have recovered, as well as paralysis of voluntary muscles, most of which latter were of central origin. He had found two cases of peripheral origin in literature. His own cases were briefly as follows:

CASE I.—Male, aged thirty-eight, spent an evening conversing with a friend in a tightly closed room, which was heated by a furnace from below. After a time his face became flushed and hot, he felt dizzy, and his head ached; there was nausea, blackness before the eyes, and six hours' unconsciousness supervened. On attempting to walk, then, he noticed that his right leg was weak and his foot turned in, and the right foot was anæsthetic. The author saw him a week later, and found paralysis of the muscles supplied by the peroneal nerve, and anæsthesia. Electrical reactions normal at first, but degenerative later, with concurrent atrophy.

CASE II.—Female, aged eighteen, attempted suicide with illuminating gas. Her room was broken open and she was found dazed but not unconscious. Recovered senses rapidly, but extensors of the right hand were paralyzed. She gradually atrophied, exhibited degenerative reaction, and in time recovered. Slight anæsthesia.

The author was under the impression that both radial and peroneal paralyses occur most frequently in winter, among the poor occupying illy ventilated rooms heated by stoves, and that mild carbonic oxide poisoning may be a more common cause than we imagine.

DR. SACHS thought that an excellent case had been made out for the author's carbonic oxide theory. Numerous cases of musculo-spiral paralysis generally credited to pressure, might possibly have such origin. It is a suggestion that ought to be entertained.

DR. STARR said the cases reported were interesting and no doubt peripheral in their nature. But we should be cautious in ascribing unilateral paralysis to a general intoxicant in the system. Other poisons occasioning paralysis caused symmetrical lesions, as exampled in alcohol, lead, arsenic, diphtheria, where the injuries are always bilateral. He was aware that, of course, as in lead poisoning, the paralysis was sometimes more marked upon one side than another. This was, therefore, a presumption against the cause ascribed by Dr. Jacoby. What was the cause, then? He described cases of his own of coma, where patients lying for many hours would have pressure paralysis of the ulnar or other nerves. In another case a patient had paralysis of the adductors of the arm after a uræmic convulsion, which was ascribed to the grasp of the attendant. He thought pressure of some sort more

probable as a cause in the cases just portrayed than carbonic oxide.

DR. SACHS stated that carbonic oxide differed from other poisons in the rapidity of its effects. Those mentioned by Dr. Starr were very slow. In such rapid cases it might not be safe to apply the symmetrical rule.

DR. DANA regarded the cases as due to the action of both elements. In comas, for instance, very slight pressure may produce paralysis where ordinarily it does not. The paralyses so frequent in alcoholic intoxication are explicable in this way. Carbonic oxide may affect the system in a similar manner.

DR. JACOBY said that the same objections had been made in cases of ether and osmic acid injections. He did not consider his position beyond question, but with the two other cases in literature added to his own, the theory advanced was tenable.

NEWS ITEMS.

The Prevention of the Spread of Consumption.—The following rules to be observed for the prevention of the spread of consumption were approved last Tuesday by the Health Department of New York City, and ten thousand copies were ordered to be printed for public distribution.

Pulmonary tuberculosis (consumption) is directly communicated from one person to another. The germ of the disease exists in the expectoration of persons afflicted with it. The following extract from the report of the pathologists of the Health Department explains the means by which the disease may be transmitted:

"Tuberculosis is commonly produced in the lungs (which are the organs most frequently affected) by breathing air in which living germs are suspended as dust. The material which is coughed up, sometimes in large quantities, by persons suffering from consumption contains these germs often in enormous numbers. . . . This material when expectorated frequently lodges in places where it dries, as on the street, floors, carpets, handkerchiefs, etc. After drying in one way or another it is very apt to become pulverized and float in the air as dust."

By observing the following rules the danger of catching the disease will be reduced to a minimum:

1. Do not permit persons suspected to have consumption to spit on the floor or on cloths unless the latter be immediately burned. The spittle of persons suspected to have consumption should be caught in earthen or glass dishes containing the following solution: Corrosive sublimate, 1 part; water, 1000 parts.

2. Do not sleep in a room occupied by a person suspected of having consumption. The living rooms of a consumptive patient should have as little furniture as practicable. Hangings should be especially avoided. The use of carpets, rugs, etc., ought always to be avoided.

3. Do not fail to wash thoroughly the eating utensils of a person suspected of having consumption, as soon after eating as possible, using boiling water for the purpose.

4. Do not mingle the unwashed clothing of consumptive patients with similar clothing of other persons.

5. Do not fail to catch the bowel discharges of consumptive patients with diarrhœa in a vessel containing corrosive sublimate 1 part, water 1000 parts.

6. Do not fail to consult the family physician regarding the social relations of persons suffering from suspected consumption.

7. Do not permit mothers suspected of having consumption to nurse their offspring.

8. Household pets (animals or birds) are quite susceptible to tuberculosis; therefore do not expose them to persons afflicted with consumption; also, do not keep, but destroy at once, all household pets suspected of having consumption, otherwise they may give it to human beings.

9. Do not fail to cleanse thoroughly the floors, walls, and ceilings of the living and sleeping-rooms of persons suffering from consumption at least once in two weeks.

Death of Dr. Charles Bland Radcliffe.—We regret to learn of the death, on June 18th, of Dr. C. B. Radcliffe, from the rupture of a varicose vein. Dr. Radcliffe had long held an eminent position as an authority on nervous disease and as a highly esteemed writer on questions of nerve force, especially in its electrical relations.

The Pentacle of Rejuvenescence.—On two occasions this month Dr. Brown-Séquard has made communications of a most extraordinary nature to the Société de Biologie of Paris. The statements he made—which have, unfortunately, attracted a good deal of attention in the public press—recall the wild imaginings of mediæval philosophers in search of an *elixir vitæ*. He obtained by compression and washing from the testicles of young animals a fluid, which he injected into the subcutaneous cellular tissue with a hypodermic syringe. He performed the experiment on himself, repeating the injection almost every day for a fortnight, with results which appeared to him to warrant an immediate communication to the Society. He stated that he had experienced a rejuvenescence of all his forces, physical and psychic; all that had become difficult or impossible for him owing to advancing age became once more easy, and he found himself possessed of the same vigor as he had had thirty years before. He could undergo fatigue in standing, travelling, and in intellectual labor previously impossible; the functions of defecation and micturition also were discharged with greater ease. MM. Féré and Dumontpallier, in commenting on M. Brown-Séquard's statements, observed that they would require to be rigidly tested and fully confirmed by other self-experimenters before they were likely to meet with general acceptance; and in this opinion we fully concur.—*British Med. Journal*, June 22, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, JUNE 20, 1889. No. 3.

ORIGINAL LECTURES.

THE SURGERY OF THE CENTRAL NERVOUS SYSTEM.

Address before the Medical and Chirurgical Faculty of Maryland, April 24, 1889.

BY RANDOLPH WINSLOW, M.A., M.D.,

PROFESSOR OF SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF BALTIMORE.

MR. PRESIDENT AND GENTLEMEN: It has fallen to the lot of my predecessors to record from time to time the many advances in the surgical art which have taken place during the present decade. Under the beneficent influence of antiseptic principles the various cavities of the body have been boldly invaded by the surgeon, and most of the viscera subjected to the operator's knife. It is but repeating an oft-told tale to mention the surpassingly brilliant achievements of abdominal surgery. The dread peritoneum of a few years ago has become the most tractable of all membranes, so that with proper care intra-abdominal operations are attended with a very small mortality indeed. The wonderful feat of Lawson Tait, who performed over one hundred and thirty consecutive ovariotomies without a death, stands unparalleled in surgical performances. Operations on the liver, kidneys, stomach, and intestines are followed by most gratifying results. The invasion of the thorax for surgical purposes has become a frequent occurrence; the drainage of the pleural cavity is often performed; the removal of large portions of the thoracic walls for the cure of chronic empyema is successfully undertaken; and even the resection of portions of the pulmonary tissue for neoplastic growths has been safely done. An attempt was made a few years ago by Bloch to resect a lobe of the lung for tuberculosis, but the patient died in twenty-four hours, and the surgeon, chagrined and filled with remorse, terminated his life with his own hand.

Only a few years ago, a celebrated surgeon declared that the limit of operative surgery had probably been reached, but in the short time which has elapsed since this statement was made, some of its most momentous advances have occurred. Amongst all the magnificent achievements of modern medicine and surgery, there is none in which diagnostic acumen and operative dexterity are shown to a greater degree than in the new and but partially explored field of cerebral surgery. I therefore desire to direct your attention to the subject of the surgery of the central nervous system.

By brain surgery I do not mean those cranial injuries which are accompanied with external marks, which serve as guides to direct us to the seat of trouble, but the various intra-cranial affections which make their presence known by signs dependent upon the disturbance in the functions of the parts involved.

Before beginning the consideration of individual lesions, let us briefly call to mind something of the anatomy and physiology of the brain and its coverings. Dr. Keen, at the Congress of American Physicians and Surgeons held in Washington in September, 1888, describes the brain as consisting of a number of viscera, rather than as one organ, and this view simplifies our conception of the brain and its functions very much. The functions of the different portions of the brain have only been partially determined, certain areas are known to preside over certain functions, whilst the functions of other areas are not understood. Marvellous results have followed experimentation upon animals and most of our knowledge of the functions of the brain has been obtained in this way; doubtless increased understanding of the mysteries of this most important structure will yet be obtained by experimentation on animals, by clinical and post-mortem observations, and by the electrical stimulation of the exposed human brain during the performance of surgical operations.

The portions of the brain which are amenable to surgical procedures are chiefly found in the cortex, the base of the brain and its internal ganglia being for the most part inaccessible to operative measures. The frontal lobes, whilst sufficiently accessible, do not always present enough clinical evidence of the pathological condition to justify an operation. As we go backward we come to the motor region which is mostly grouped around the fissure of Rolando, but it involves also the hinder parts of the first and second frontal convolutions, whilst the centre for articulate speech is found in the third frontal convolution on the left side in right-handed persons, in the same convolution on the right side in those who are left-handed. In the pre- and post-Rolandic convolutions and the paracentral lobule we have the centres for voluntary motion; those portions which preside over the motions of the lower extremity occupying the upper, those for the upper extremity, the middle, and those for the head and neck, the lower part of the motor area. The occipital lobes probably preside over vision, and the temporo-sphenoidal lobes are largely concerned in hearing.

Lesions of the cortex of the brain are made manifest by disturbances in the functions of the affected parts, especially in the motor region, where irritative lesions give rise to spasms of the special group of muscles which has its centre at the point of irritation, and destructive lesions produce paralysis of the same set of muscles.

TUMORS OF THE BRAIN.

Tumors of the brain occur more frequently than is suspected by most practitioners, and have been regarded as almost hopeless, until within the last five years. Now the brain has been subjected to surgical treatment, and cerebral tumors are removed with wonderful success. Let us inquire into the nature of brain tumors before

proceeding to consider the propriety of attempting their removal.

The most important investigations into the nature of tumors of the brain have been made by Dr. W. Hale White, of London (*Guy's Hospital Reports*, 1886), who carefully studied the records of 100 brain tumors found in the dead-house of Guy's Hospital from 1872 to 1884. Of these 100 cases of tumor of the brain 45 were tuberculous, 24 gliomata, 2 glio-sarcomata, 5 carcinomata, 4 cysts, 1 lymphoma, 1 myxoma, 5 gummata, and 3 undetermined. Of these 100 tumors only 9 could have been removed, provided the diagnosis could have been made, but it is not probable that more than one could have been accurately diagnosticated and successfully extirpated. Tuberculous tumors are especially unfavorable for operation, as the disease is usually found to involve other organs as well. Of the forty-five cases in White's list there was not one in which other organs were not involved. Bergmann is opposed to all operations for the removal of tuberculous and gummatous tumors, as the former are almost incapable of being diagnosticated, or of being thoroughly removed, whilst the latter require medical rather than surgical treatment. In one case, at least, has Horsley removed a tuberculous tumor of the brain, and Macewen claims to have done the same thing.

The diagnosis of cerebral tumors is frequently very difficult, as in some regions they give rise to no symptoms, whilst in others it is impossible accurately to locate the tumor, though it may be known that a tumor is present. Dr. Seguin says (*American Journal of the Medical Sciences*, Aug. 1888) the diagnosis of a case of supposed cerebral tumor should be worked out in five directions: 1. The diagnosis of a tumor of the brain. 2. The location of the tumor. 3. The depth of the tumor. 4. The solitude or multiplicity of the growth. 5. The nature of the tumor.

First. The diagnosis of a cerebral tumor is usually easily made by an experienced physician, when it gives rise to symptoms, but there may be a tumor without symptoms, especially in the frontal lobes. The most characteristic signs of cerebral tumor are headache, convulsions, local or general paralysis, partial anæsthesia, optic neuritis, hemianopsia, coma, stupor, and slow pulse, which are grouped according to the exact location of the growth. The cranial nerves are liable to be pressed on, and to cause either paralysis or spasms of the muscles which they supply. Aphasia and unsteadiness of the gait are also suggestive of an endo-cranial tumor.

Second. The location of the tumor. As has been said, portions of the cerebrum are very tolerant of pathological lesions, and a tumor affecting these areas may give rise to no localizing symptoms. The frontal lobes, and portions of the temporal, parietal, and occipital lobes, belong to this category. There will be general symptoms of cerebral disease, but no special symptoms. There is left then the central portion of the cerebral cortex, which is known as the "motor area," and which is grouped around the fissure of Rolando. Lesions of this area give rise to symptoms which serve usually to locate accurately the seat of the disease. There are besides certain areas in the occipital lobes, which preside over vision, and a tumor involving this region will cause half vision in both eyes on the side opposite to that in which the tumor is seated. The first temporal gyrus seems to be the organ for the perception of spoken language. Tumors of the motor zone give rise to symptoms which vary with the seat of the growth, which symptoms are spasms or paresis of the muscles to which the fibres from these zones are distributed.

In order to localize the seat of the tumor there are certain first or "signal symptoms" which must be carefully inquired into and studied; later, as the tumor increases in size and invades surrounding areas, these signal symptoms are obscured by other signs. Suppose a tumor originates in the lower half of the middle portion of the motor area, the first sign would probably be a spasm or paresis of the opposite thumb and fingers, gradually extending to the face and tongue, probably producing aphasia if the left side is involved, and finally terminating in permanent paralysis of the hand and forearm. When the first spasm is limited to a small area the patient retains consciousness and watches the convulsive movement with interest or anxiety. When tumors occupy the sensory zone, their presence is made known by hemianopsia or half vision, if they are situated in the occipital lobes, and by ataxia or staggering gait when the growth presses upon the cerebellum. Dr. Seguin says, "a patient who has headache, vomiting, choked disk, dulness tending to stupor, increasing hemianæsthesia, with lateral hemianopsia, without hemispasm or hemiplegia, quite certainly has a tumor in the white substance of the occipital lobe. When with general symptoms of cerebral tumor there is present lateral hemianopsia, as almost the only localizing symptom, there is almost certainly a tumor on the mesial aspect of the occipital lobe, opposite to the dark half fields, compressing and destroying the cuneus." As the tumor grows it may encroach upon the motor area, causing paralysis of the lower extremity, or by downward pressure on the cerebellum may cause ataxia.

Third. The diagnosis of the depth of the tumor. Dr. Seguin stated that the study of lesions of the human cortex and associated fasciculi does not furnish corresponding data for a diagnosis, and that "it is impossible to distinguish a cortical from a subcortical tumor by the character of the convulsions observed." In favor of strictly cortical or epicortical lesions are localized clonic spasms, epileptic attacks beginning as local spasms and followed by paralysis, early appearance of local cranial pain and tenderness, and increased local cranial temperature. In favor of the subcortical location of the tumor are local or hemiparesis, followed by spasms, predominance of tonic spasms, absence, small degree, or late appearance of headache and tenderness to percussion, normal cranial temperature. These symptoms are by no means absolutely diagnostic.

Fourth. The solitude of the tumor. It will usually be possible to diagnosticate the solitude or multiplicity of cerebral growths, by taking into consideration the character of the growth and the complex of symptoms present. Thus a person with tuberculosis presenting at the same time signs of cerebral tumor, is likely to have more than one secondary focus in the brain. Also when there are tumors in different portions of the brain each growth may cause special localizing symptoms. It is not always possible, however, to diagnosticate the solitude of the tumor.

Fifth. The nature of the tumor. We may suspect cerebral tumors to be tuberculous, cancerous, or gum-

matous if they occur in persons who have had like diseases in the external parts or in other organs, and in such cases operation is contra-indicated. In other forms of tumor the diagnosis cannot be made. Tuberculous tumors form 23 per cent.; gliomata, 13 per cent.; sarcomata, 13 per cent.; hydatids, 5 per cent.; cysts, 4.6 per cent.; carcinomata, 4 per cent.; gummata, 3.6 per cent.; with a few of many forms of neoplasm.

CRANIO-CEREBRAL TOPOGRAPHY.

There are various methods of determining the relation of the cranium to the different convolutions and fissures of the brain, but in operating for the removal of tumors a large portion of the skull must be removed, and it is not difficult to expose the growth.

The *fissure of Rolando* is the most important position to locate in operations on the motor area, as from this line we can map out a growth in any part of the motor region of the cortex. This fissure may be found by drawing a line directly backward seven centimetres from the external angular process of the frontal bone, and from the posterior end of this line raising a vertical three centimetres; the upper extremity of this vertical line will correspond to the lower end of the fissure of Rolando. The upper end of the fissure may be found by taking a point five centimetres behind the bregma. The bregma can usually be felt, or can be located by drawing a line through the external auditory meatus at right angles to a horizontal base line drawn from the base of the upper incisor teeth to the base of the occiput.

Reid's method of determining the position of the fissure of Rolando is to erect two verticals, one in front of the ear and the other behind the mastoid process, at right angles to a base line running from the infra-orbital margin through the auditory meatus to the external occipital protuberance. The fissure of Rolando will be represented by an oblique line running from behind forward from the top of the posterior vertical line to about the middle of the anterior line.

Probably the best method of locating the fissure of Rolando is by halving the line from the glabella to the external occipital protuberance; the top of the fissure lies half an inch behind the centre of this line, and in most cases forms an angle of sixty-seven degrees with the sagittal suture. A very useful instrument has been constructed of soft iron, consisting of a long arm one-third of an inch wide and ten inches long, from the middle of which a short arm, six inches in length, branches off at an angle of sixty-seven degrees. When this instrument is properly applied, the short arm lies over the fissure of Rolando.

The *fissure of Sylvius* can be located by a line drawn from a point one and a quarter inches behind the external angular process upward and backward to a point three-quarters of an inch in front of the parietal boss.

Having made the diagnosis of a tumor involving the cerebral cortex, and having determined upon its removal, the growth must be accurately mapped out on the shaven scalp, and the patient prepared for the operation. The day before that of the operation the head is shaved and washed with soft soap and ether, the position of the tumor determined and marked on the scalp, and the head covered with lint soaked in a 1:20 solution of carbolic acid, oiled silk, and cotton-wool, which is allowed to remain on twenty-four hours. The bowels are moved by a purgative the day before, and by enema on the morning of the operation. Chloroform should be administered in preference to ether, owing to the great cerebral congestion which the latter produces, and it is well to give a hypodermatic injection of a quarter grain of morphia previous to the operation, in order to assist in producing contraction of the bloodvessels, and thereby to diminish the hemorrhage. Dr. Keen recommends ergot for the same purpose. Mr. Horsley prefers to follow the full antiseptic details of Listerism in his operations on the brain, but most surgeons are satisfied with the ordinary antiseptic methods.

OPERATIVE TECHNIQUE.—Horsley strongly recommends making a large curved flap instead of the usual crucial incisions, as the soft parts are more easily held out of the way when the flap is curved. The bone should be removed freely with the large trephine and ronguer, and the buttons carefully preserved in hot, carbolized cloths, in order that reimplantation may be done if it seems desirable to do so. The dura mater should be divided an eighth of an inch from the margins of the opening in the bone, and to the extent of four-fifths of the exposed area. The middle meningeal artery should be secured by a ligature passed through the dura mater before it is divided. Hemorrhage from the pia mater will have to be arrested by ligature of the bleeding vessels, which is also the best method of arresting bleeding from the brain itself, though this is difficult, as the cerebral vessels are very friable, and the ligature must be applied very gently. Upon division of the dura the brain may at once bulge into the cranial opening, if the pressure is great, and the tumor be exposed to palpation and sometimes to sight. At times the surface of the brain is discolored at the seat of the tumor; at other times there is no noticeable pathological condition, the brain appears to be normal, and the tumor is situated deeply in the cerebral substance, and usually can be detected as a hard lump, by palpation.

The tumor may be enucleated by tearing through the intervening brain-tissue with the end of the finger or the handle of a spoon. Even where a large tumor has been removed, the cavity in the brain-substance does not remain long, as its base is rapidly raised up almost to the level of the cranial opening.

Drainage should be made as in any other wound, and a perforated rubber tube may be employed for this purpose. Horsley recommends removing the tube in twenty-four hours, but Weir thinks it may safely be allowed to remain for two or three days. After all oozing has been arrested by gentle pressure with a soft sponge, the dural flap is sutured with fine silk or catgut sutures, and the fragments of bone may be reinserted in position. The scalp is now securely sewn in place, and an antiseptic dressing applied, of iodoform, carbolic acid, or sublimate gauze, according to individual preference. The dressing is quite firmly applied in order to diminish the chances of the formation of a hernia cerebri. There are many details in regard to operative technique and after-treatment which, though worthy of discussion, must be omitted from this report.

DANGERS OF THE OPERATION.

First. Sepsis. The operation must be thoroughly aseptic.

Second. Hemorrhage. This is a very fruitful source of danger, and it is a very troublesome complication. The vessels should be seized with clamps and ligatured, or the clamps may be left in the wound for twenty-four hours or more, an effective antiseptic dressing being applied.

Third. Œdema of the brain. This is a complication which frequently follows interference with the brain.

HISTORICAL SKETCH OF THE OPERATION.

In tracing the history of the operation of opening the skull for the removal of a tumor, we see that it is absolutely a production of our own day and generation, since it has only been possible to locate accurately lesions of the brain a very short time. Probably the first operation for the removal of a cerebral tumor was performed by Durante, of Rome, in May, 1884, who removed a tumor as large as an apple, and the patient recovered. The growth was situated in the frontal lobe on the left side, the symptoms being vague: loss of memory and smell, with some displacement of the eyeball, being the most prominent. This operation was reported by Professor Durante at the Ninth International Medical Congress, and had not attracted much notice up to that time.

The first operation which attracted immediate and universal attention was that performed by Mr. Rickman John Godlee, on November 25, 1884, the diagnosis having been made by Dr. J. Hughes Bennett, of a tumor involving the upper third of the fissure of Rolando. The patient died on the twenty-eighth day after the removal of the tumor. This operation is chronologically of the greatest importance, as it demonstrated the feasibility of the operation and supplied valuable information which has since been utilized. Hirschfelder and Morse, of San Francisco, followed with an unsuccessful case.

To Mr. Victor Horsley, of London, is due the marked impetus in regard to the removal of cerebral tumors, his first case having been operated on, on October 9, 1886, with success. Since then operators in England and America have extirpated these tumors, with ever-increasing success. Several cerebellar tumors have also been removed, but as yet no patient has recovered. I do not see, however, why it may not be possible to excise successfully neoplasms of the cerebellum. It is not always easy to tell whether the ataxic symptoms of a case are due to a growth within the cerebellum or to pressure upon the cerebellum by a tumor originating elsewhere. In a case recently under the observation of Prof. Preston and myself, at the Hospital of the Good Samaritan, the cerebellar symptoms were very distinct, but at the autopsy the tumor was found to have its origin in the corpus callosum and to press upon the cerebellum secondarily. This tumor could have been removed without much difficulty if the friends of the patient had not declined an operation.

CYSTS OF THE BRAIN.

Several cases of cystic disease of the brain have been operated upon; some of them with success. The symptoms and operative procedures do not materially differ from those described above in connection with cerebral tumors.

EPILEPSY.

For a long time it has been known that epileptiform seizures are liable to follow injuries to the head, when the cranial lesion presses upon or irritates the cerebral cortex. Many successful operations of trephining for traumatic epilepsy have been performed. My father, Dr. Caleb Winslow, thirty years ago operated on a man for traumatic epilepsy, successfully. When there is a clear history of injury to the head, and pain or epileptic seizures supervene, it is but rational to remove a portion of the calvarium at the seat of injury, and frequently a depressed bit of bone or spicules of bone pressing upon and irritating the meninges and cortex will be found. Sometimes an accumulation of serum or other inflammatory products will be found, and upon its evacuation the epileptic attacks may cease. Of 82 cases of trephining for traumatic epilepsy, collected by Walsham, of London, 48 were permanently cured, 13 improved, 4 not improved, and 17 died; 9 deaths were due to suppurative meningitis.

Spontaneous or idiopathic epilepsy is believed to be due to discharging lesions of the cerebral cortex, as enunciated by J. Hughlings Jackson; and, in inveterate cases after the failure of other therapeutic measures, it is justifiable to expose the brain by trephining and excise the focal centre which appears to be involved. This has been done successfully by Horsley, Keen, Nancrede, Macewen, Bergmann, and others; but we must remember that medical means should be exhausted before resorting to so serious a procedure. In order to determine what portion should be excised, it is essential that the history of the attacks should be accurately learned, and the patient placed under skilled observation, so that the localizing symptoms may be carefully noted. In this manner it is learned what muscles are primarily affected, and, by the excision of the centre presiding over this group of muscles, the spasms are greatly diminished in frequency and intensity or arrested altogether.

Some very remarkable results have been obtained by Horsley; Keen, and others by the excision of discharging centres. As it is impossible to locate such a small portion of the cerebral cortex as the centre for any one set of muscles, as for example that for the thumb, by any rigid rules, it is necessary to find some means of determining the part to be excised, in order that no more of the brain substance may be removed than is required for the purpose; fortunately, we have a means in the electrical stimulation of the exposed area. The application of a weak faradic current to the discharging centre will cause epileptiform spasms in the group of muscles which are presided over by this centre.

The excision of portions of the cortex for epilepsy is a direct sequence of the recent advances in our knowledge of the anatomy and physiology of the nervous system; and, whilst the future of the operation appears brilliant, caution must be exercised lest unnecessary operations should be performed. We have seen the wonderful results of abdominal surgery, but most of us cannot but believe that operative fervor has caused the sacrifice of barrelsful of ovaries and tubes, which ought to have remained where nature put them.

When a portion of the motor area is excised there is at once a complete paralysis of the muscles which are

in connection with this portion, but, in the course of time, a species of collateral functional activity seems to occur, and most of the paretic muscles recover their power, leaving perhaps a very limited group of muscles permanently paralyzed.

ABSCESS OF THE BRAIN.

Intracranial suppuration following fractures and injuries to the skull is a complication which is well known, and the treatment of which by trephining and drainage has, in numerous instances, been attended with success. Beside the collections of pus which are found at the seat of injury between the bone and dura, or subdural, it is not very infrequent for abscesses to occur in the brain substance, hence the surgeon should not be satisfied with simple trephining in cases which present symptoms of intracranial suppuration. When no pus is found when the button of bone is removed, he should go through the dura, and, if pus is not found, an exploration of the brain with a disinfected director or aspirating needle should be made. If pus is found in the brain, it should be evacuated and the cavity drained. There are also brain abscesses which are either idiopathic or, at least, their causes are not discovered, and these may be submitted to surgical treatment if the diagnosis can be made..

A very important variety of cerebral abscess is that which is consecutive to suppurative inflammation of the middle ear or the mastoid cells, of which numerous cases have been observed, and a number of them successfully operated on. The case of the late Roscoe Conklin is still fresh in our memory. The abscess may result from a septic phlebitis extending from the middle ear to the white substance of the brain, or from an extension of the inflammation to the dura mater. The abscess will probably occur at a point one and one-fourth inches above and the same distance behind the centre of the bony meatus of the ear. Mr. Barker calls attention to the subnormal temperature which is found, especially toward night, in cases of cerebral abscess due to ear disease. The patient takes cognizance of inquiries, but answers with deliberation, and this "sluggish but perfect cerebration" is a symptom of cerebral abscess. Usually, when an abscess is present, the dura bulges into the trephine hole, but does not pulsate. Macewen, in addition to the usual method of operating, scrapes out and disinfects the middle ear, and the disinfection of the frontal sinus should also be carefully attended to in any operation upon the brain in which this cavity is opened, as it prevents the access of air through the nasal cavities and helps to diminish the risk of infection.

INTRACRANIAL HEMORRHAGE.

Hemorrhage from the meningeal or cerebral vessels, as the result of trauma, is also recognized as being within the domain of surgical interference. If there has been a fracture of the skull, and symptoms of compression soon supervene, after a period of consciousness, it is almost certain that an intracranial hemorrhage is taking place, and no surgeon ought to hesitate to penetrate the dura mater, evacuate the blood, search for the bleeding vessel and ligate it. Sometimes, after an injury to the head without fracture, symptoms of compression gradually supervene, and in this case the skull should be trephined, depending upon focal symptoms to guide one to the seat of hemorrhage. Krönlein, of Zürich, recommends, in cases presenting symptoms of hemorrhage from the middle meningeal artery, without external lesions, that the trephine be first applied about one inch to one and a half inches from the external angular process of the frontal bone, but, if no hæmatoma is found, to apply the instrument again on the same horizontal line at the point where a vertical line from the posterior border of the mastoid process crosses it. Thiersch, in one case, removed three trephine buttons before the clot was found.

Excellent results have followed trephining closed skulls for hemorrhage, Krönlein saving two out of four cases in what would have been otherwise fatal affections. Several cases have been reported of late trephining for symptoms of compression where the formation of an abscess was suspected, but which proved to be a hæmatoma, the removal of which was followed by recovery. The chief symptoms of hemorrhage are, 1st, an interval of consciousness after injury; 2d, hemiplegia on the opposite side, frequently with convulsions; 3d, slow and hard pulse; 4th, slow, labored, and stertorous respiration.

SURGERY OF THE SPINAL CORD.

Operations upon the spinal cord are of even more recent development than those upon the brain, and as yet only a very few cases have been reported of the removal of tumors within the spinal canal. As far back as 1882, Dr. Carl Maydl, of Vienna, conceived the project of resecting the whole thickness of the cord, and, after some successful experiments on dogs, actually opened the spinal canal of a man for that purpose, but found the conditions too unfavorable to proceed further. The patient recovered from the operation, but was not improved at all. I consider this one of the boldest surgical conceptions on record, and, as such, worthy of remembrance.

Resection of the vertebral laminæ for the purpose of relieving pressure upon the cord resulting from Pott's disease or from traumatism, was first performed by that great surgeon, Dr. William Macewen, of Glasgow, in May, 1883. The first case was one of paraplegia with incontinence of urine and feces, due to a connective-tissue tumor at the seat of angular curvature of the spine. A boy, absolutely paraplegic for eighteen months, was completely cured by resection of the posterior vertebral arch, and removal of the connective-tissue growth at that point. Dr. Macewen has operated on six cases presenting similar symptoms to those of this case, with the result of curing or greatly alleviating four of the cases, with one death, which was possibly hastened by the operation, and one death months after the operation from an extension of the tubercular disease. This is a most interesting field, and one well worthy of careful cultivation.

TUMORS OF THE SPINAL CORD OR MEMBRANES.

Mr. Victor Horsley, a young man, an adept in physiology, pathology, neurology, and surgery, has done more than any other person to create the new department of cerebral surgery, and to him is also due the credit of first successfully removing a tumor from the

spinal dura mater, which, by its pressure on the cord, had produced for four years the most unendurable agony with paralysis. The patient was cured after resection of the third, fourth, fifth, and sixth vertebral arches and incision of the dura mater, when a tumor was found and easily enucleated. Dr. J. B. Deaver, of Philadelphia, is the only American, as far as I am aware, who has operated for the removal of a tumor within the spinal canal. No tumor was found except that due to an osteitis of the vertebræ. The patient died from supposed inhibition of the phrenic nerve, and the case is only mentioned as being of interest in the history of the development of this branch of surgery.

ORIGINAL ARTICLES.

A PRELIMINARY NOTE ON THE USE OF EUCALYPTUS IN HEADACHE.

BY MORRIS J. LEWIS, M.D.,
PHYSICIAN TO THE INFIRMARY FOR NERVOUS DISEASES, AND TO THE CHILDREN'S HOSPITAL,
AND
G. E. DE SCHWEINITZ, M.D.,
OPHTHALMOLOGIST TO THE INFIRMARY FOR NERVOUS DISEASES, AND OPHTHALMIC SURGEON TO THE CHILDREN'S HOSPITAL.

A BRIEF history of the following cases, where the use of oil of eucalyptus was beneficial in relieving headache of various types after other means had failed, is here put on record in order that others may try this remedy as a therapeutic measure in a class of cases in which it has been used with asserted success,[1] but certainly without extended trial. Our own attention was called to this use of the oil of eucalyptus on account of the markedly beneficial effect in Case I., presently to be described, where it was exhibited to control headache believed to be of malarial origin, quinine having failed. The sudden and surprising improvement which followed its use led us to employ it in other forms of functional headache not due to eye-strain or similar removable cause.

CASE I.[2]—Susan B., æt. forty-eight, single. Marked history of malaria and rheumatism. Formerly had severe head-pains once in two months, lately violent occipital headache every other day, with zig-zag lines and hallucinations as prodromes, entirely unrelieved by quinine. With the exhibition of five minims of the oil of eucalyptus six times a day the headache completely disappeared. Examination of the eyes revealed slight refraction error, the correction of which did not alleviate the pain.

CASE II.—Mrs. D., æt. thirty-one. Nervous family history, menstruation irregular and too free, headaches grouped about periods, no apparent eye-strain, indiscretion in diet sometimes appears to precipitate headache which is not a hemicrania, but general and mostly occipital and congestive in type. If headache is not due to dyspeptic attack, eucalyptus will usually abort it, one capsule (five minims) four or five times a day. Her plan is first to take aromatic ammonia and if no relief is afforded then eucalyptus. Antipyrin and cannabis indica gave no relief.

CASE III.—Mrs. T., æt. forty-six. Gouty family history, menopause, headaches for years, mainly in occipital region, congestive in type, any increase of blood in head greatly increases pain, doubtful malarial history, quinine in full doses sometimes lessens attack, salicylate of soda at first gave relief, but caused dyspeptic symptoms, likewise cannabis indica; antipyrin unless given in heroic doses is useless. Patient was placed on rigidly restricted diet, and given five minims of oil of eucalyptus four times a day, with marked benefit. Subsequently the administration of a few doses of the drug sufficed to ward off any severe attack. Eyes were normal, no asthenopia. Patient reports a sister greatly relieved by the same remedy given by another physician at her solicitation.

CASE IV.—Miss L. W., æt. twenty-eight. Right-sided frontal headache. Attacks formerly accompanied by visions, lately has silver rings constantly before eyes. Cannabis indica gave but little relief, eucalyptus gave great relief, headaches much better lately; no malarial history. The eyes revealed results of former granular lids, and the headaches were never in apparent association with eye-strain.

CASE V.—Miss C., æt. twenty-five. Menstrual irregularities. No former severe illness. No history of malaria. Headaches for twenty years, chiefly on left side, bearing no relation to menstruation, congestive and lasting several days. No apparent eye-strain. Iron and arsenic were prescribed for the anæmia and oil of eucalyptus in the event of headache. With the prodromal symptoms of a headache, twenty minims of the drug, served in the belief of the patient to abort the attack.

CASE VI.—Mrs. G., æt. thirty-three. Gouty family history; pelvic peritonitis three years ago; a great sufferer from "hay fever;" frequent attacks of tonsillitis; the patient in girlhood had lived in a malarious district. For years she has been the victim of the most violent occipital headaches of a congestive type, beginning with the feeling of a band in the back of the neck, succeeded by a thumping pain in the occiput which rapidly spreads over the entire cranium and is associated with intense injection of the conjunctiva and swelling of the face. The eyes showed a low grade of hypermetropic astigmatism and 10° of insufficiency of the internal recti. Appropriate glasses were ordered, and prisms for the relief of the muscular defect, with the result of ameliorating the asthenopia, but not materially influencing the headache. A prolonged course of all the usual remedies employed for the relief of headache of a congestive type was ordered, but without any very satisfactory results. Oil of eucalyptus, five minims every four hours, gave great relief even during a paroxysm, but was most efficient when exhibited during a prodromal period, or when taken after such exposure, like cooking, which was always succeeded by a headache. The ability to abort a paroxysm was a marked feature of the medication.

CASE VII.—Miss S., æt.. twenty-one. Nervous and with a nervous family history; anæmic and

[1] United States Dispensatory.
[2] University Medical Magazine, May, 1889.

suffering much from enforced loss of sleep; was subject to violent neuralgic headache uncontrolled by the ordinary remedies and not relieved by treatment of a slight ocular defect. Oil of eucalyptus in five-minim doses produced better results than any other remedy; indeed, while the patient continued its use the headaches were practically absent, although they returned when this was discontinued. There was no history of malaria in this case.

CASE VIII.—Miss L., a plethoric woman, æt. nineteen, the subject of hemorrhoids; slight leucorrhœa and sharp frontal with dull occipital headache brought on by fatigue, by the use of the eyes and often without apparent cause, usually worse in the first few hours of the morning. Both eyes hypermetropic with insufficiency of the external recti of four degrees, the correction of which did not stop the headaches, nor was medication directed to the regulation of the portal circulation followed by relief in this direction. Eucalyptus was the means of producing marked relief. The patient also took strychnia and nitro-muriatic acid. Antipyrin, cannabis indica, and the bromides were not successful.

We have given the histories of these eight cases in which the results are sufficiently definite to stimulate further trial of this remedy. We are employing the drug in a number of cases, in which we are not yet in a position definitely to state the result; in others we know that relief has been afforded. Dr. Weir Mitchell and Dr. Wharton Sinkler, of the Infirmary staff, have employed the drug in like cases with benefit. The latter has used it in three cases with decided relief; in one, in a case of long-standing migraine, it was the sole medicine for five or six weeks. In this case the paroxysms, which were right supraorbital and severe, were materially shortened and the intervals lengthened.

Eucalyptus has been used with asserted success in migraine and other forms of neuralgia as mentioned above. In our experience it appears to be of most service in the headaches of congestive type; in one case where indiscretion in diet precipitated an attack the drug did not appear to be of use, although it relieved other seizures. In this and other of our cases the drug acted more beneficially when given at the very onset of the attack than after full development of the paroxysm, and we would suggest its trial as early as possible in the seizure, especially when there is a long prodromal period. The question has arisen, Are the headaches of a malarial origin that are relieved by this drug, or has it some other mode of action? In the first case the evidence of malaria is undoubted, in none of the other cases is it positive, and in some not at all probable. We intend, in a future paper, to give the results of further trial with the oil of eucalyptus, and hope to be able to state more definitely the type of headache in which the most relief may be anticipated. In two instances our results were entirely negative, in both an organic lesion existed, the one in the alimentary canal, the other in the ovaries. We have used the drug in one case of ciliary neuralgia without effect and intend to give it trial in other types of neuralgia.

COMPARATIVE RESULTS IN NINETY CASES OF PLEURISY, WITH SPECIAL REFERENCE TO THE DEVELOPMENT OF PHTHISIS PULMONALIS.[1]

BY VINCENT Y. BOWDITCH, M.D.,
OF BOSTON,
PRESIDENT OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

HAVING watched for some time the various opinions and discussions upon the question of the tubercular nature of pleurisy and its subsequent development into phthisis, and being struck with the widely varying ideas upon the subject, it occurred to me to make an investigation as to the results of the cases of pleurisy occurring in my father's practice from 1849 to 1879.

While recognizing the impossibility in any such investigation of determining absolutely the tubercular or non-tubercular character of pleurisy, I believed that I might at least be able to draw some practical conclusions from the subsequent history of these cases which would assist us in giving advice to our patients, and, more especially, prevent us from unnecessarily alarming ourselves, our patients, and their friends: a tendency which, I think, needs to be constantly guarded against in our profession, in the practice of which we are continually subjected to the influence of extreme views founded upon theories unsubstantiated by facts.

It may be well here to mention some of the various opinions held by eminent men in different countries as to the nature of pleurisy.

The most extreme views are held by Landouzy, of the Paris Faculty of Medicine, who believes that nearly all cases of pleurisy are tubercular in character, and that the so-called simple pleurisy from "taking cold" is a very rare thing, but that the great majority are the expression of an incipient pulmonary tuberculosis which may appear at any subsequent time, even after an interval of many years. In this opinion he is enthusiastically followed by his pupils, J. R. G. Joanney[2] and Alois Mayor,[3] who give his views in two theses upon this subject.

Germain Sée[4] believes that three-fourths of all pleurisies are tubercular, and quotes Fiedler, who says that out of 112 pleurisies which were aspirated

[1] Read before the American Climatological Association, June 27, 1889.

[2] Joanney (J. R. G.). "Du prognostic éloigné de la pleurésie." Thèse. Paris, 1881, p. 61, No. 230

[3] Mayor (Alois). "De l'avenir des pleurétiques." Thèse. Faculté de Méd. de Par., 1887, No. 181.

[4] Sée (Germain). Boston Med. and Surg. Journal, March 11, 1886.

21 recovered, 25 died of phthisis, and 66 recovered from the pleurisy, but were found to be victims of other tubercular diseases.

Strümpell[1] speaks of the simple fibrinous or exudative pleurisy as a rare disease, and says that the larger proportion are tubercular, and claims that even if phthisis appears several years later it is probably the result of pleurisy, and that only in comparatively few do the symptoms of acute tuberculosis or chronic phthisis appear as an *immediate* result.

Among those who take more moderate views may be mentioned Chauvet[2] and Rühle,[3] who go only so far as to say that many cases of pleurisy are probably tubercular in character.

Demandre[4] speaks of the deformity of the chest and development of bronchiectasis, and says that usually with pleurisy comes an interstitial pneumonia, but gives no statistics as to the frequency of subsequent phthisis.

Gerhardt,[5] in 1879, speaks of pleurisy as often preceding phthisis, but also gives no statistics. Niemeyer[6] classifies various forms of pleurisy, and is evidently far from the opinion advanced by Landouzy.

Anstie[7] says: "It is now well established, not merely that pleurisy occurs in phthisis, but that pleurisy can set up true tuberculosis even in previously healthy persons."

Bartholow[8] speaks of the importance of recognizing pleurisy as a frequent cause of phthisis from causing tubercular deposit.

Loomis,[9] while recognizing the existence of tubercular pleurisy, is very far from believing that all cases are of tubercular nature, or that they will be followed by phthisis.

Sir Andrew Clark[10] recognized the fact that phthisis is by no means an infrequent sequence of pleurisy, but evidently is far from believing in the tubercular origin of all cases, and in these views he is supported by C. Theodore Williams,[11] who, in the second edition of his book on "Pulmonary Consumption," says on page 24: "Not uncommonly the friction sound of dry pleurisy in the supraclavicular region is the first sign of the presence of tubercle at the apex of the lung. . . . It is generally noted that the lungs are the first organs affected (in miliary tuberculosis), and it is extremely rare for tubercle to exist in any organ without also being present in the lung." On page 49 he says: "Chronic pleurisy, by crippling the movements of the lungs and thus promoting congestions and exudations, prevents the proper expansion of the alveoli, and thus affords a nidus for the bacillus;" and on page 271: "There are two principal modes of origin of fibrosis (that is, non-tubercular phthisis), firstly, *from attacks of pleurisy*, and pleuro-pneumonia, etc."

F. C. Shattuck,[1] in an article on pleurisy, for the *Reference Handbook of the Medical Sciences*, says: "Whatever views one may hold as to the frequency of primary effusion as an independent disease, it cannot be denied that recovery absolute and permanent is common enough;" and, further on, adds: "In view of the fact that tuberculosis does develop in cases of this class after an interval which may be long, we cannot regard them with quite the same equanimity as we are justified in preserving in cases where rational and physical signs alike disappear."

B. F. Westbrook[2] and Herman F. Vickery,[3] in papers published within the last two years, give results of cases of pleurisy which have subsequently become phthisical, and lay stress upon the importance of watching carefully the convalescence of pleurisies in all cases.

Strongly opposed to the views of Landouzy may be mentioned Theodore Dumin,[4] of Warsaw, who expresses the greatest astonishment at the former's conclusions, and claims that true tubercular pleurisy, where miliary tubercles begin on the pleura, is a rare disease. He believes, on the other hand, that most pleurisies are the result of pulmonary tubercle, which cannot be detected by physical signs, and that the prognosis of the latter form depends upon the course of the primary disease in the lung, which can be healed; views which seem to me as theoretical and difficult of proof as those he criticises.

A strong practical refutation of Landouzy's views appears in a paper by Blachez,[5] a man evidently of large practical experience, who scouts the idea of the tubercular origin of all pleurisies, and cites a

[1] Strümpell. Text-book of Medicine (translation), p. 244.

[2] Chauvet. "De la pleurésie précédant le debût de la tuberculose pulmonaire." Lyon. méd., 1885. xlix. 111–114.

[3] Rühle. Ziemssen's Handbook of Medicine (translation), vol. v. p. 500.

[4] Demandre. "Des consequences et definitives des épauchements pleurétiques sereux, etc. Rec. de mém. de méd. . . . mil, Paris, 1881, xxxvii. p. 537.

[5] Gerhardt. Wiener med. Wochenschrift, No. 40, 1879.

[6] Niemeyer. Text-book of Practical Med., vol. i. p 249.

[7] Anstie: Pepper's System of Med., vol. iii. p. 513.

[8] Bartholow: Pepper's System of Med., vol. iii. p. 513.

[9] Loomis: Practical Medicine, 1884, p. 186.

[10] Clark (Sir Andrew): Lancet, 1885.

[11] Williams (C. Theodore): Pulmonary Consumption, 1887. P. Blakiston & Son, Philadelphia.

[1] Shattuck (F. C.): Reference Handbook of Medical Sciences. "Pleurisy."

[2] Westbrook (B. F.): "Pleurisy as a Predisposing Cause of Phthisis Pulmonalis." New York Med. Journ., 1888, xlvii. 617.

[3] Vickery (H. F.): "Pulmonary Tuberculosis as a Sequel to Ordinary Pleurisy with Effusion." Med. and Surg. Journ., 1887, cxvii. 521.

[4] Dumin (Theodore): "Observations sur les rapports qui existent sutre la pleurésie et la tuberculose." Gaz. Heb. de Méd., Paris, 1887, 2 s. xxiv. 295.

[5] Blachez: "La nature de la pleurésie." Gaz. Heb. de Méd., Paris, 1886, 2 s. xxiii. 662.

number of cases classed as simple pleurisy which have never in later years developed the least pulmonary trouble. He also makes special mention of an epidemic of "pleurésie à figore," which occurred in the army many years ago, the subjects of which he has kept under supervision since, not a single symptom of pulmonary trouble having appeared in any one of them.

E. Martel,[1] of Saint-Malo, comes to the same conclusion as Blachez, and regards as ridiculous the opinion that nearly every case of pleurisy is tuberculous.

Austin Flint,[2] in an analysis of 47 cases, states that in 3 the subsequent development of phthisis was probable, although not demonstrated, and in one case only was the occurrence of this disease as a sequel certain.

Of 53 cases reported by Blakiston,[3] not one became phthisical during several years after recovery from pleurisy.

Thus we have specimens of the widely varying opinions among different observers.

In obtaining my results I have addressed the following set of printed questions to the patients or their friends, answers having been frequently obtained from physicians, who have known the patients, or from town clerks:

1. Where have you been living since you consulted Dr. Bowditch?
2. What has been your occupation?
3. Has your general health since then been good, bad, or indifferent?
4. Have you been subject to cough since?
5. Have you had any lung trouble since, and if so, how long after you last saw Dr. Bowditch did the cough begin?

Should the patient be no longer living, will the friends kindly answer the following questions?

1. How long after the patient saw Dr. Bowditch did he (or she) die?
2. What was the cause of death?
3. Did the patient recover entirely for any length of time after last consulting Dr. Bowditch?
4. Was he (or she) subject to cough?
5. If lung trouble caused the death, about how long after seeing Dr. Bowditch did the cough begin?

If any reputable physician saw the patient at any time, please give his name and address; and if the physician has removed or died, please state, if you can, what he thought the patient died of.

Although the number of cases in which I have been able to collect satisfactory data is small in comparison to the number addressed, yet considering the lapse of time and the frequent uncertainty of address, I am gratified at having received replies from so many.

In analyzing the cases I have attempted no distinct classification into so-called "dry pleurisies," pleurisies with serous effusion and empyemas, but have put them all together, my endeavor having been to cast out every case in which there was the least evidence, upon careful examination, of coexisting pulmonary disease (for we all know that pleurisy is a frequent accompaniment of phthisical trouble).

Le me say, also, that with our knowledge that tubercular disease can arise and be checked never to reappear, I should not be so foolishly illogical as to attempt to prove in any given case of pleurisy that because of the subsequent health of the patient it was, therefore, of non-tubercular character. It would, moreover, be a just criticism to speak of the possibility of preëxisting disease of the lung in some of the cases mentioned, even when the most careful examination failed to reveal any such condition.

Any such possible error is only an example of the extreme difficulty of arriving at precise conclusions in such questions.

My aim, therefore, is simply to show, as far as possible, how many of the patients have regained and kept their health and how many have succumbed later to phthisis or other probably tubercular disease.

For the sake of convenience, I have divided the thirty years from 1849 to 1879 into decades.

During the first decade, from 1849 to 1859 inclusive, I have the records of 30 patients.

Of these, 11 are now (1889) living, and have all been well, except one who has been subject to cough since at times; 17 are dead. In 2 the condition today is not known, although in one case phthisical symptoms developed fourteen years after the examination, and is classed accordingly; and the other, seven years after the first illness, showed "perfect percussion note and respiration everywhere."

Of the 17 who died, 12 died of phthisis; 5 died from other causes:

No. 1, of chronic rheumatism thirty-five years later, aged eighty-five.

No. 12, from suicide during melancholia twenty-five years later, aged thirty, in the interval having been in robust health.

No. 14, from angina pectoris five years later aged fifty-eight, having been well in the interval.

No. 16, from "acute gastritis" thirty-one years later, aged sixty-nine, no evidence of pulmonary trouble showing itself, although rather delicate.

No. 3, from "inflammation of the bowels" twenty-two years later, aged forty-one, no apparent pulmonary trouble having been present, although after great privations in army life a cough appeared for some time, and then disappeared entirely.

Adding to the number now living, 11, the 1 whose present condition is unknown, but who seven years after the first examination showed a perfectly normal condition, we have 12 who recovered entirely, or 40 per cent.

[1] Martel (E.): Gaz. Heb. de Méd., 1886, 2 s. xxiii. p. 699.
[2] Flint (Austin): Pepper's Hand-book of Medicine, p. 394.
[3] Blakiston: Ditto.

Adding to those who died of phthisis, 12, the 1 who developed phthisis fourteen years after the first examination, we have 13, or 43⅓ per cent.

Died from other causes, 5, or 16⅔ per cent.

In the second decade, from 1860 to 1869 inclusive, I have records of 19 cases.

Of these, 7 are now living, 5 having been in robust health since, 2 somewhat delicate, but without apparent pulmonary trouble.

12 are dead: 9 have died of phthisis, or have developed symptoms since; 3 have died from other causes. One (No. 32) died from "intermittent fever and chronic diarrhœa contracted in the army" two years later, aged thirty (questionable tubercular trouble). No. 40 died of acute mania twenty-three years later, aged thirty, the intervening period having been one of robust health.

Living = 7, or 36 + per cent.

Dead from phthisis, or with phthisical symptoms now = 9, or 47 + per cent.

Dead from other causes = 3, or 16 + per cent

Of No. 32 it should in fairness be noticed that the question of tubercular trouble in the intestines is raised. If such was the case, the original pleurisy was very possibly tubercular, which would alter the percentage slightly.

In the third decade, from 1870 to 1879 inclusive, I have the records of 41 cases.

Of these, 25 are now living without pulmonary symptoms, of whom 23 have been in good health since; 2 are not robust.

15 are dead: 9 have died from phthisis, and 1 (No. 87) is now phthisical = 10 phthisical; 6 have died from other causes: 3 (Nos. 51, 53, and 61) from heart disease, all over fifty years of age, and from ten to fifteen years after examination; 1 (No. 67) from apoplexy following Bright's disease twelve years later, aged sixty-eight, with apparently perfect health in the interval; 1 (No. 72) from "intestinal obstruction" eleven years later, aged fifty-one, perfectly well before; 1 (No. 76) from "paralysis" three years later, aged fifty-one.

Living without pulmonary symptoms, 25 = 61 + per cent.

Dead from phthisis, or now having symptoms of phthisis, 10 = 24 + per cent.

Dead from other causes, 6 = 14 + per cent.

In comparing the percentage of mortality from phthisis in the cases from 1870 to 1879 inclusive with that of the cases of the first decade, 1849 to 1859, we find the percentage 24 per cent. in the former as against 43⅓ per cent. in the latter, and against 47 + per cent. in the second decade, from 1860 to 1869 inclusive.

In attempting to explain this difference in percentage we must not lose sight of the fact of the possibility of the development of phthisical symptoms later in those of the third decade who now seem perfectly well. In one case reported by Mayor phthisical symptoms did not appear until twenty-four years after the pleuritic attack which occurred during childhood, this being, so far as we know, the longest interval spoken of, the patient, a comparatively young woman, succumbing to pulmonary disease—whether a result, as Mayor would have us believe, of the previous pleurisy, or not, being to my mind most questionable.

The fact remains that long periods of perfect health do occur between the onset of the two diseases, and we must, therefore, take this into account in comparing the later with the earlier decades.

In looking carefully over the tabulations, I find, in the first decade, among the deaths from phthisis, the following points:

1 patient died eighteen years after the pleuritic attack.

3 patients died between ten and fifteen years after the pleuritic attack.

9 patients died in seven years or less after the pleuritic attack.

In the second decade, 1860 to 1869 inclusive:

1 patient died in eighteen years after the pleuritic attack.

2 patients died between ten and fifteen years after the pleuritic attack.

6 patients died under five years after the pleuritic attack.

In the third decade, from 1870 to 1879 inclusive:

1 patient died eleven years after the pleuritic attack.

1 patient died ten years after the pleuritic attack.

7 patients died under seven years after the pleuritic attack.

1 patient, still alive, developed phthisical signs about ten years later than the pleuritic attack.

Thus we see that in the first two decades about two-thirds of those who died of phthisis succumbed in seven years, or less, while about one-third lived from ten to eighteen years after. If we adopt the same ratio for the third decade, we have already passed the period (ten years) during which two-thirds of those who developed phthisis succumbed, and even supposing the possibility of a later appearance of phthisis in the remaining one-third, it still leaves the percentage of mortality from pulmonary disease from ten to fifteen per cent. less than in the previous decades.

Should this result be found similar to others in the future, it would give us ground for believing that modern methods of treatment in these cases are productive of better results than in the past. While not attempting to prove this fact, of course, by such tabulations, and granting that it may be mere coincidence, it is at least worthy of remark,

and certainly points favorably toward the greater attention paid in later years to the after-treatment of pleurisies, by proper expansion of the chest, outdoor exercise, good food, etc.

In connection with the preceding, and as opposed to the extreme views mentioned before, I wish before closing to lay special stress upon this point, viz., that I consider as most unwarrantable the assertion, that because phthisis develops in any subject who, several years before, has had pleurisy, the two diseases in every case are necessarily dependent upon each other, the intervening period having been one of robust health.

As an example, let me cite the following case:

A man, now thirty-eight years of age, eleven years ago developed a sudden acute pleurisy, with effusion on the right side, for which he was aspirated by my father, after which he recovered quickly, but three months later was attacked with similar symptoms on the left side, for which he entered the City Hospital, where the fluid gradually disappeared without aspiration. In a few months he entirely regained his health, and has been perfectly well ever since, pursuing his occupation as conductor on one of the railroads near Boston. I examined him this spring, and found him a man of robust health, of good color, the chest full and well formed, the percussion and auscultation on both sides absolutely perfect without a trace of his former pleuritic trouble.

Now even supposing the possibility of a subsequent development of phthisis in this man, should we be justified in saying that the double-sided pleurisy was the first sign of the pulmonary disease which appears in later years? Most assuredly not, it seems to me; on the other hand, why is it not perfectly possible in such cases that the subsequent pulmonary disease is an independent process arising in precisely the same way as in other cases in which no history of a former pleurisy can be obtained?

This and similar cases where there is a long period of perfect health, make me think that the advocates of the certain connection between the two diseases and of the tubercular nature of all pleurisies are drawing conclusions too hastily.

The results of this investigation show us at least:

First. That whether we can prove absolutely, by such statistics, that all pleurisies are tubercular or not, yet a large percentage of these patients who were afflicted with pleurisy, often in apparently chronic forms, recovered their health and have never had any recurrence of the original trouble nor development of subsequent pulmonary or otherwise tubercular trouble.

Second. That while undoubtedly there are many cases in which an attack of pleurisy is followed within a comparatively short space of time by pulmonary trouble; and, therefore, special care should be taken of the patient during convalescence from the former disease, yet we are not justified in giving such gloomy prognosis as we should be inclined by accepting the extreme views held by Landouzy and his followers.

To give hope and courage to patient and friends should be the first effort of every physician.

Let us be doubly on our guard then, while looking for the truth, in accepting conclusions founded upon insufficient evidence, lest we run the risk of hindering what we most desire, viz., the recovery of our patients.

REPORT OF TWENTY-FOUR CASES OF ACUTE MILIARY TUBERCULOSIS.[1]

BY JOHN C. MUNRO, M D.,
OF BOSTON.

THE following analysis of twenty-four cases of acute miliary tuberculosis of the lungs has been made in order to furnish, if possible, some clews toward the detection of a disease that not infrequently bewilders the most careful practitioner. The cases have been taken from the records of the Boston City Hospital, and it is to the courtesy of the members of the staff that I owe the pleasure of presenting this brief consideration. For the use of some valuable private notes made on a number of the patients by Dr. Samuel Delano I feel greatly indebted also.

All the cases were fatal, occurring within the last five years, and only those in which a post-mortem examination was made have been chosen.

The number is too small to attempt to draw percentage conclusions, and some factors, generally considered of importance, have been passed over because of insufficient data.

Fourteen patients were males, with an average age of thirty-eight years, that of the females (not including one child two and a half years old) being only thirty-two years. The oldest, a man, was sixty-five years of age, while eight were between the ages of forty and sixty years. Over half were born on or near our eastern coast; two were negroes.

The majority were ill in February, March, or April; their occupations were of various kinds and apparently had no causative influence.

Only three gave a phthisical family history; in twelve it was not phthisical, while in nine no history could be obtained.

Three-fourths of all the patients had always been well up to the time of the present illness, and although in thirteen cases the autopsy revealed a chronic tuberculosis in addition to the acute miliary process, yet of this group only a single patient had given a history of having suffered from phthisis; in fact, the remainder had always been looked upon as healthy. Even though there was a history of cough for one or

[1] Read before the American Climatological Association, June 24, 1889.

more months in quite two-thirds of the cases, it was noted as being slight, with a muco-purulent expectoration and had excited no alarm except in one instance where several attacks of profuse hæmoptysis had occurred. Severe cough was recorded in two cases, but in each it had begun less than a month before admission to the hospital.

Among the exciting causes might be mentioned the following: overwork and exposure in a damp cellar; several weeks of hard drinking, with but little food; partial asphyxiation from drowning; measles, scarlatina, whooping-cough with measles, and vaccination each in one case.

The clinical diagnoses varied considerably, from tubercular meningitis in eight cases, to exhaustion, typhoid, bronchitis, etc. Two patients died immediately after admission to the hospital, so that very little history and no physical examination could be obtained.

About one-third of the cases gave a clear history of a marked chill ushering in the disease; a few more complained of feverishness and malaise, while headache, naturally frequent in those with a meningeal affection, was pronounced in a few others.

Loss of flesh, strength, and appetite, wherever noted, came on rapidly and was very marked. Likewise night-sweats, though recorded too few times to be of much value, were always profuse.

In one-half of those cases where derangement of the menstrual function could serve as an indication of any general trouble no record is made, but in the other half all the patients had had amenorrhœa for from one to four periods.

In the two cases that had had hæmoptysis an old cavity was found in the lungs at autopsy.

The condition of the bowels gave no light in making a diagnosis; cases with tuberculous ulceration of the intestines were apparently affected neither one way nor the other by the lesion.

The tongue was generally coated and dry; in a few cases cracked.

The temperature in a majority of the cases at entrance was 100° F. or over, the pulse 100 or over, and the respiration 28 or over; of the course of each throughout the disease mention will be made later.

In seventeen cases an examination of the urine was made, and albumin, generally a slight trace in amount, was found in eleven. Of the latter, autopsy showed an acute tuberculosis of the kidneys in over seventy per cent., whereas of the six cases in which albumin was not found, only three (fifty per cent.) had a similar lesion. Notwithstanding these numbers are too small to warrant definite conclusions, they at least suggest that there may be some connection between the two conditions.

The eyes were examined in four patients; one, with sarcoma of the hypophysis had atrophy of both disks; two had a double optic neuritis, and, finally, one had tubercle of the choroid. Considering the importance that some writers attach to this latter condition, it is unfortunate that more cases were not examined with the ophthalmoscope.

Examination of the heart afforded no assistance in diagnosis so far as the recorded results show.

The signs obtained from careful physical examinations of the lungs, though often confusing and misleading, apparently show an undercurrent of certain definite characteristics. The disease is of such a nature, and the lungs are so frequently the seat of some other morbid process that only examinations most carefully made during life, and compared topographically with the lesions found after death, can establish what signs belong properly to an acute miliary infiltration. A few cases carefully studied in this way would help wonderfully to clear up certain obscure points. Unfortunately, from the predominance of some symptom, or set of symptoms, pointing elsewhere than to the chest, the lungs are not infrequently hastily examined merely to exclude a more definite lesion, like lobar pneumonia, and are not again considered during the course of the disease. However, in the present group of cases certain characteristics seemed present so far as could be learned from the recorded examinations, many of which were very carefully and thoroughly made.

In the cases where there was a chronic in addition to the acute tuberculous process—that is, in the acute-chronic cases, percussion showed that dulness was not necessarily confined to the region of chronic infiltration, but might be extended to a considerable distance beyond, and be repeated in some other area where no chronic process existed. In a few simple acute cases where no dulness is recorded, it was probably overlooked; in the remainder it varied from a feeling of lessened elasticity to a moderate degree of dulness in localized regions over a single lobe or even over an entire lung.

In nearly every case where fremitus or vocal resonance was increased, the effect of a chronic induration could not be ruled out.

The respiratory murmur in simple acute cases was, for the most part, indistinct, harsh, with a high-pitched inspiration and a lower-pitched, prolonged expiration. In acute-chronic cases all qualities are recorded, but in the majority it was feeble in intensity, harsh, with high-pitched inspiration, and a prolonged expiration grading from a lower pitch to a bronchial quality.

The râles heard in simple acute cases were almost invariably few in number, fine in quality, dry, and sometimes moist, high-pitched, and less often low-pitched (none of the latter being moist). Often several kinds were to be heard in the same patient. In acute-chronic cases they were coarser in type,

more numerous, and more moist, besides being accompanied by those of a fine dry or a fine moist character. In one or two cases, even with a chronic process, only a few râles of any kind were recorded.

The clinical history of the cases while under treatment can be briefly summarized. They rapidly lost strength and flesh, delirium or coma soon appearing in nearly every case. The pulse steadily increased in frequency and decreased in strength. The respiration, somewhat rapid at entrance, increased in frequency, becoming more and more shallow, and often irregular with increasing cyanosis. A few developed abdominal tympanites; a few, pain in the chest. Even though in several cases a slight amelioration intervened for a few days, the course was steadily and rapidly down-hill to death, and no treatment seemed to be of any avail in checking its progress.

The clinical charts showed nothing very significant, except, perhaps, from a negative point of view. The temperature ranged from 101° to 103° F., on the average, making daily excursions of one or two degrees, while very rarely was it higher in the morning than at evening; it seldom fell below the 100° line, and rarely rose as high as 104°. The pulse rarely fell below 100, and often rose to 140 beats or more; its line steadily ascended while the daily excursions were not very marked. The line of respiration followed very closely that of the pulse, both frequently being high without any corresponding elevation of temperature. In no case was there cessation of fever before death.

The duration of the fatal illness, reckoning from the initial chill or other marked symptom, averaged thirty days; in uncomplicated acute cases, where the beginning could be more accurately determined, the duration was shorter by about four days. The average length of stay in the hospital, excluding the two cases that died at entrance and one previously under treatment for measles, was fifteen days, so that they were all well developed before any systematic treatment had been undertaken.

The following complications of cases while in the hospital are important: One woman, fifty-eight years old, had sarcoma of the hypophysis with a few cerebral symptoms; one, supposing herself pregnant, had just attempted abortion, and during her stay was attacked with facial erysipelas; one man had general psoriasis, and one had probably an acute tubercular pleuritis.

The post-mortem examination in every case showed an acute miliary tuberculosis of the lungs, and, so far as could be judged, it was the important, or one of the important, pathological conditions. As mentioned before, thirteen showed in addition some degree of chronic tuberculous process going on, often with cavity formation. Where a focus for general infection did not exist in the lungs themselves, one could always be found in one or more groups of lymphatic glands. In thirteen cases, divided almost equally between the acute and acute-chronic, there was an acute tuberculosis of the meninges, causing so marked symptoms during life that the diagnosis was strongly influenced. Next to the lungs, the following organs were invaded by tubercles: the spleen in 15 cases, the kidneys in 14, the meninges in 13, various groups of lymphatic glands in 11, the intestines (with ulceration) in 10, the liver in 9, the pleura in 7, the pericardium and peritoneum each in 3, the bladder, diaphragm, and a supra-renal capsule, each in 1.

In conclusion, these cases would seem to indicate that an acute pulmonary tuberculosis should be suspected when the following indices are present (the existence of other pathological conditions in the lungs giving rise to characteristic signs and symptoms that ought not entirely mask those under consideration): Sudden severe illness, ushered in with a chill, in a person previously healthy or with a history of chronic phthisis; slight cough and expectoration, no hæmoptysis, marked loss of flesh and strength; loss of elasticity, or a slight dulness over part or the whole of a lung or surrounding a limited area of marked dulness; indistinct, harsh respiration, with high-pitched inspiration and prolonged low-pitched expiration; a few scattered fine dry or fine moist râles, generally high-pitched; a rapid, weak pulse, with quickened, shallow respiration, and cyanosis out of proportion to the physical signs; a temperature steadily feverish, but without marked variations; local evidences of miliary infiltration in other organs.

MEDICAL PROGRESS.

The Channel of Tuberculous Infection.—Another piece of work emanating from Dr. Koch's Hygienic Institute, was an address by Dr. Cornet on the channel of tuberculous infection, which is referred to in the Berlin letter to the *London Medical Press* of June 12th.

The knowledge that infection in cases of pulmonary phthisis took place generally through particles of dried sputum reaching the lungs was important from a prophylactic point of view, as the speaker pointed out, and if we could determine the point of entry of the virus in glandular tubercle also, our aim would be more intelligent and precise. The speaker's attention was first directed to the cervical submaxillary and occipital regions. He showed some guinea-pigs into whose conjunctival sacs some sputum containing tubercle bacilli had been placed. No injury of the sac took place. Notwithstanding this, the bacilli grew, penetrated the tissues, and set up swelling and hyperplasia of the conjunctiva. In all the animals caseation and softening subsequently took place in the neighboring glands. The side on which the inoculation took place showed the most extensive changes. In two other animals the nasal

mucous membrane was painted by means of a pigeon's feather, with bacillary sputum in one case, and a pure cultivation of tubercle bacilli in the other. The corresponding glands became tuberculous in both cases. In other cases the cavity of the mouth was inoculated with sputum or pure cultivation material, and all the corresponding glands became tuberculous. In another guinea-pig infective material was introduced into the ear, and the auricular glands became subsequently caseous. In still another animal the skin over the nose was shaved clean and sputum rubbed in, when later on a serpiginous ulceration covered with a thick scab, reminding one of lupus, was observed; the cervical glands became much enlarged. Another animal was scratched on both cheeks with a finger-nail dipped into tuberculous sputum, and the ulceration, covered with scab, that followed, spread and became confluent. Another animal was rubbed, but without abrading the surface, with a wash leather that had been dipped into bacillary sputum; after some weeks it was killed, when the corresponding lymph-glands were found enlarged. Other animals again were infected from the vagina, penis, toes, etc. He concluded that tubercle bacilli could penetrate into the system without causing distinguishable injury at the point of entry. The nearest lying glands became tuberculous and illness developed resembling scrofula as it was often seen, and without doubt scrofula depended on a tuberculous infection from without. This was the less remarkable when we remembered how incautiously we treated phthisical sputum, and how frequently children made a way for the entrance of disease by putting every possible object within their reach, covered with tuberculous dust it might be, into their mouths, up their noses, or into their ears.

Capillary Bronchitis in Children.—The necessity for active treatment in cases of capillary bronchitis occurring in young children or infants, is readily recognized. DR. JULES SIMON, in an article on this subject (*L'Abeille Médical*, June 3, 1889), deals at length with the most efficient methods used in treating this disease. The therapeutic measures which he has found most useful are, briefly outlined, as follows: The child should be at once put to bed and well wrapped up; large sinapisms should be placed on the chest, and a teaspoonful (or less, according to age) of the following mixture should be given every hour:

℞.—Gum mixture	f ℥iijss.
Alcoholic extact of aconite (Fr. P.)	gtt. xv.
Acetate of ammonium . .	gr. xv.
Syrup of codeine , . .	℥jss to ℥jv.—M.

If necessary, the child should be put in a sinapic bath for about five minutes, and afterward well dried and wrapped in hot blankets. The bath may be repeated at intervals without danger. Stimulants should be given in the form of champagne, egg-nogg, or toddies. If the nervous system has suffered greatly, the following injection may be resorted to:

℞.—Hydrate of chloral . .	grs. vij to xv.
Water	f ℥ij.
Tincture of musk . .	gtt. xx.
Tincture of valerian . .	gtt. xv.—M.

Quinine will be found most valuable during the entire course of the disease. It is usually administered in doses of from one to two and a half grains, and is best given in the form of a potion in glycerine, with the addition of a little tartrate syrup.

Massage in Chronic Typhlitis and Perityphlitis. — DR. GEORGE HÜNEFAUTH, in an exhaustive article on the subject of massage in chronic typhlitis and perityphlitis, cites fifty-three cases in which the treatment was followed by complete cure. Hot applications to the abdomen were also found valuable, as well as a mild course of water treatment, consisting of rubbing down with cold water, douches, and hip-baths. These have always exerted a beneficial action upon the appetite and sleep. The treatment, which should take place twice daily, and should last for about fifteen minutes, should be continued for three to four months. In mild cases, six or eight weeks will often effect a cure.—*Münch. med. Wochen.*, May 28, 1889.

An Antiseptic Solution.—Under the title of "An Ideal Antiseptic," DR. ROTTER, in the June number of the *Gazette de Gynêc.*, gives the following formula:

Corrosive sublimate . . .		5 parts.
Chloride of sodium . . .		25 "
Phenic acid		200 "
Chloride of zince Sulphocarbonate of zinc	āā	500 "
Boric acid		300 "
Salicylic acid		60 "
Thymol Citric acid	āā	10 "
Water		100,000 " —M.

If a weak solution be required, the sublimate and the phenic acid may be omitted. The above solution will not injure instruments.

The Treatment of Dysentery with Creolin.—After having carefully observed the effects of creolin in sixteen cases of dysentery, DR. OSSOVSKI, in the *Revue gén. de clin. et de Thérap.*, June 6, 1889, unhesitatingly recommends it in this disease. The treatment followed by him was merely to give the patient two to four large injections daily of a solution of creolin (1 to 100). Besides its antiseptic properties the drug also acted as a hemostatic, and quickly checked the bleeding of the irritated intestine. When given to patients subject to malaria, the drug in some instances caused a rise of temperature, which, however, was speedily overcome by quinine.

Exalgin in Dysmenorrhœa.—Exalgin is fast being introduced into the therapeutics of various ailments. Its most recent successful use is, perhaps, in neuralgic dysmenorrhœa, in which painful affection its anodyne properties give most satisfactory results. The following formulæ for its use are quoted from the *Revue de Thér. méd.-Chir.*, June 1, 1889:

℞.—Curaçao	f ℥jss.
Exalgin	grs. xl.—M.

A teaspoonful of the above contains about four grains of exalgin. Curaçao is the best medium for its ad-

ministration, as it almost completely disguises the unpleasant taste of the drug. Another agreeable formula is:

℞.—Linden-flower water . . . 100 parts.
Laurel water . . . . 10 "
Curaçoa . . . . . 40 "
Exalgin . . . . . 3 " —M.

Sig. A seaspoonful to be taken every half hour until the pain ceases. Doses of a dessertspoonful may be given if the pain is very intense.

Fracture of the Thyroid and Cricoid Cartilages; Recovery.—An interesting and rare case, reported in the *Lancet* of June 8, 1889, was recently exhibited by DR. SOKOLOVSKI at the Warsaw Medical Society, of a woman in whom the anterior portion of the thyroid and both halves of the cricoid had been fractured through an accident with the strap of a mill. The immediate symptoms were severe pain in the throat, cough, and the expectoration of a considerable quantity of blood, also marked dyspnœa. Tracheotomy (inferior) was performed the second day. During the fourth week portions of the necrosed cartilage came away. After two months both halves of the thyroid were removed with forceps, and it was found that no trace of the cricoid remained, the posterior wall of the glottis being formed by the anterior mucous coat of the œsophagus. The patient made a good recovery, and was soon able to swallow food without difficulty. It is noteworthy that the condition of the larynx was accurately ascertained on the second day after the accident by means of the laryngoscope, and also that cases of fracture of the cricoid are almost invariably fatal.

Cocaine Poisoning.—From the large number of cases of cocaine poisoning which have been reported, it is evident that in different individuals the susceptibility of the drug is very different; indeed, this is the case in the majority of instances. This fact calls for the greatest caution in the use of the drug.

Probably the toxic symptoms which have been observed are due to an irritation of the sympathetic nerve, as dizziness, coldness of the extremities, perspiration, enlargement of the pupils, and a quickening as well as weakening of the heart's action are always observed.

The treatment of severe cases of poisoning, when accompanied with marked symptoms of collapse, must be the active use of stimulants; in cases of severe muscular movements unaccompanied by loss of consciousness, narcotics will be found valuable. Some authorities claim to have observed beneficial effects from inhalation of nitrite of amyl. From numerous experiments upon animals RICHET and LANGLOIS have discovered that the toxic action of cocaine is greater when the animal is subjected to a high temperature, and steadily increases with the rise of temperature. When a dog, into which a minimal quantity of cocaine had been injected, was placed in a bath of a temperature of 107° F., it was immediately seized with convulsions. The same animal was able to endure, without toxic symptoms, an injection fifteen times as large as the preceding one, when placed in a bath of a temperature of 87° F. Cold baths or applications would, therefore, constitute a most rational therapeutic agent in cases of cocaine poisoning in man.

We quote two recent cases of cocaine poisoning which are of special interest. The first is reported by DR. HÄNEL in the *Berliner klinische Wochenschr.* A dentist injected $1\frac{7}{10}$ grains of cocaine into the gum of a strong, although somewhat chlorotic, nineteen year old girl, prior to the extraction of a tooth. The above quantity he divided into two injections. Immediately after the second injection the patient became pale and fell into strong convulsions. Nitrite of amyl had no effect. When Hänel saw the patient she was entirely insensible, slightly cyanosed, and in severe convulsions which lasted for five hours. The pupils were greatly enlarged and showed no reaction; pulse at first impossible to count, later 176; respiration 44. The temperature in the axilla at the end of this stage was 101° F. After the convulsions had ceased the patient lay unconscious for two hours and upon awakening evinced a strong photophobia. The skin was slightly anæsthetized, the mouth, throat, and nasal cavity totally so. Other symptoms were thirst, retching, retention of urine, lasting twenty-four hours; sleeplessness for thirty hours, and total loss of appetite. All the symptoms above named, with the exception of the last, disappeared within two days. Hänel is of the opinion that the maximum dose of cocaine should not exceed half a grain, and that in patients with cardiac weaknesses even this dose is inadvisable.

The second case, which is reported by DR. MOIZARD in the *Centralbl. für Chirurg.*, June 1, differs from others in that the drug was taken by the mouth, whilst in the majority of poisoning cases recorded the drug has been administered hypodermically into the mucous membrane. Nearly four grains of cocaine in solution were given by mistake to a child aged four. The symptoms manifested were muscular twitchings, convulsions, nystagmus, extreme nervousness without loss of consciousness. These lasted for several hours. The next day there were still slight muscular twitchings which, however, ceased in thirty-one hours. The therapeutics employed were primarily emetics and subsequently cathartics.

Morphine-Vaseline as a Local Application in Cancer.—According to DR. B. W. RICHARDSON, morphine combined with vaseline forms one of the best possible sedative applications in cases of external malignant disease in which there is ulcerative breach of surface with continuous pain. The mode of prescribing the preparation runs as follows:

℞.—Vaseline, pure . . . . ℥j.
Chloroform . . . . . ℥ij.
Morphine . . . . . gr. iv.
Mix thoroughly and make into an ointment.

By using the chloroform a larger quantity of morphine can be introduced than if the alkaloid were used alone, the distribution through the mass being more complete. The chloroform, in the proportions named, causes, as a rule, no irritation, but acts rather as a sedative. Chloroform also is a powerful antiseptic, and as such is a good remedy in the class of cases under consideration.

Morphine-vaseline is most conveniently applied thinly spread over a piece of fine lint or soft linen. It is easily removable without injury to the surface upon which it is applied, and it may, therefore, be used even on surfaces from which the danger of hemorrhage is foreseen. The dressing may be renewed twice in the course of twenty-four hours.—*The Asclepiad*, 2d Quarter, 1889.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, JULY 20, 1889.

A TYPHOID EPIDEMIC FROM POLLUTED WATER.

THE annual report of the Superintendent of Health, of Providence, R. I., for 1888, contains an account of an epidemic of typhoid fever extending through the months of November and December of that year, which embodies several features of more than ordinary interest. In searching for the cause of the outbreak suspicion pointed to the water-supply as being most likely at fault. Accordingly, an inspection was made of the valley of the Pawtuxet, the river which furnishes the water-supply of Providence. The result was the discovery of contamination of the river water by typhoid excrement discharged into it at the village of Natick, about three and one-half miles above the pumping-station. Biological investigations of the water-supply of the city were immediately instituted with the object of discovering the particular organism of typhoid fever, but with only negative results. The failure is not surprising, as the detection of this particular species in a body of water whose daily flow is many millions of gallons is a task of extreme difficulty.

During the epidemic a large number of patients were found who had used water which had been passed through ordinary domestic filters, and it was determined to examine some of these filters in order to learn whether or not they contained the specific organism. The filters were obtained from houses in which there were cases of true typhoid fever, and care was taken to select only those in which there was no chance of contamination except from the water which passed through them. The bacteriological examinations were made by Dr. Swarts, the medical inspector, Dr. Prudden, of New York, and Dr. Ernst, of Harvard, all skilled bacteriologists. Besides the typhoid bacilli, several organisms characteristic of fecal matter were found in the filters, indicating the source of specific contamination. The results of the investigation seem to warrant the conclusion that the epidemic was due to the pollution of the Pawtuxet River by the excrement from typhoid fever patients. It is to be regretted that a comparison was not made between the number of cases of fever among persons who had used filtered water and those who had used water direct from the faucet.

The report incidently illustrates the inefficiency of domestic filtration. There can be no doubt that filters of the ordinary kind, composed of gravel, sand, and charcoal, and similar media, favor the development of bacteria. The results of the experiments of Dr. Currier, recently published in THE NEWS, show conclusively that filters, after continued use, yield water teeming with bacteria, although the unfiltered water may contain only a small number of these minute forms of life. Even the porcelain and stone filters, which are by far the most efficient, need to be sterilized at brief intervals in order to maintain satisfactory action. When water contains only harmless bacteria this special defect in filters is of little consequence; but when, perchance, the specific organism is present, the filter becomes a culture-bed for the multiplication of germ-life which is capable of infecting the water passing through it for an indefinite length of time.

Domestic filtration, unless conducted under scientific oversight, which is impracticable, apparently tends to increase the danger from the use of water containing infectious matter, and is therefore unreliable. The perfection of house-filters according to the germ-test is a most difficult problem. Even when the question is solved, the fact remains that these aids to purification are used by only a small proportion of the population. When, therefore, water is sufficiently impure to require filtration, it is most advantageous to have the process carefully conducted on a large scale at the public works.

It is a false civic economy and reprehensible administrative policy that dallies with a doubtful or positively bad water supply, and burdens the individual with expedients for protecting himself from

the possibly injurious effects from its use. The purest and best possible water should be obtained at whatever expense, and the supply carefully protected from contamination, and, if necessary, the most reliable means of artificial purification employed. When this is accomplished domestic filtration will be unnecessary.

The connection between typhoid fever and drinking water contaminated by excremental matter of specific quality as a cause, has been well established. It has also been ascertained that filters, such as are in common use, do not remove the infectious matter from water thus contaminated. When, therefore, there is real danger of infection, filtration may be employed to remove sediment or cloudiness, but the only safety lies in finally boiling the water.

CAFFEINE IN MIGRAINE.

DR. E. J. OVEREND, of Oakland, writes in the *Pacific Medical Journal* regarding his personal experience with caffeine in sick-headache. Having himself been a victim for many years, he has had an ample opportunity to test the comparative values of many drugs, from the study of which he rises with the conviction that caffeine comes as near being a specific in migraine as does quinine in intermittent fever. He is even inclined to rate its claims to specificity beyond those of the latter, but like that drug its prophylactic power outranks its curative value. His practice is to anticipate the attack by doses of two to five grains hourly, dispensed in capsules; this seldom fails to abort the attack if taken sufficiently early, or if not so taken, a marked amelioration of the symptoms results. He counsels his patients not to procrastinate, as they are prone to do, but to begin promptly the dosage as soon as the well-recognized prodromes appear. When capsules are objectionable to the patient and a solution is preferred, the salicylate of sodium should be combined with the citrate of caffeine, his belief being that the former salt not only renders the latter more stable, but also acts as a synergist. If recently reported experiments are correct, caffeine has another noteworthy advantage in that it does not enslave as do some of the narcotic remedies that are used in this affection. He has not found it necessary to increase the dose progressively, as is commonly the case with the habit-forming drugs.

Of the various proprietary preparations containing caffeine he has no commendatory evidence to give; they contain too little caffeine and too many unnecessary adjuncts, and of the effervescent compounds he remarks that they seem to contain more "fiz" than caffeine, and they give him the impression that cheapness plays a part in their construction. Dr. Overend's paper is written in a scholarly and sympathetic vein and we recommend it to the many medical men who are victims to migraine as a useful bit of post-graduate instruction.

As a result of the introduction of a supply of pure water from the Höllengebirge, in 1874, the death-rate of Vienna has fallen from 35.2 to 25.3 per 1000. The deaths from typhoid fever alone up to 1874 amounted to 700 each year. Since that time the number of deaths from this disease has fallen to 169 per annum. But Vienna has outgrown the capacity of the Höllengebirge to meet its wants, and a portion of the supply has been derived from the Potschach and also from the Schwarza Canal, the latter source being of doubtful quality. The recurrence of typhoid fever the past winter, coincident with the use of this suspicious water, has excited public comment, and plans are already being considered for supplementing the supply from greater and more distant altitudes. The beneficial effects of an improved water-supply have been so plainly demonstrated by practical experience that the Viennese municipality has been warned that no relaxation of its efforts on behalf of the public health will be tolerated.

DR. J. SOLIS COHEN, of Philadelphia, was elected, at its last meeting, an Honorary Fellow of the British Laryngological and Rhinological Association.

THE Tenth International Medical Congress will be held at Berlin on August 4 to 9, 1890. A general meeting of representatives of all the medical faculties and societies in Germany has been called by Professors Virchow, von Bergmann, and Waldeyer for September 17, to discuss the arrangements to be made for the Congress. Among those expected to be present at this conference, it is stated, are all the men of light and leading in the medical profession in Germany.

THE Seventh Special Meeting of the Fifth District Branch of the New York State Medical Association, will be held in Port Jervis (Orange Co.) N. Y., on Tuesday, August 27, 1889, under the presi-

dency of Dr. W. T. Lusk, of New York. For those who are willing to spare the time after the meeting, a beautiful and interesting carriage drive of seven miles along the Delaware River to Milford, Pa. is promised. The Committee of Arrangements, of which Dr. J. H. Hart, of Orange Co., is Chairman, is making every preparation to insure an interesting meeting, both scientifically and socially.

The Twentieth Annual Session of the Medical Society of Virginia will convene at Roanoke, on Tuesday, September 3d, at 8 P. M., under the presidency of Dr. E. W. Row, of Orange.

At the annual commencement of the medical department of the University of Vermont, held at Burlington last Tuesday, the degree of M.D. was conferred on sixty graduates.

At the recent commencement of the College of Physicians and Surgeons of New York, it was announced that the Cartwright Prize had been awarded to an essay written conjointly by Dr. Hobart A. Hare and Dr. Edward Martin, of Philadelphia. The successful competitors have voluntarily surrendered the prize because their essay had just been awarded a prize elsewhere. It appears that the essay had been put in competition for both prizes, with the expectation that the decision of one prize would be made early enough to permit them to withdraw from the second competition in case they were successful in the first. But owing to delay in the decision of the prize which should have been announced first, and to the absence of the authors from home when the announcement was finally made, there was no opportunity for the intended withdrawal before the award of the Cartwright prize was published.

The award of the Cartwright prize has consequently been reconsidered, and the prize has been awarded to Dr. Ira Van Gieson, Assistant Instructor in Normal Histology in the College of Physicians and Surgeons of New York, for his essay entitled, "Studies in Neural Pathology, embracing, (1) A Report of a Case of Syringo-myelia; and (2) A Contribution to the Pathology of the Laryngeal and other Crises in Tabes Dorsalis."

Dr. Elwood Wilson, a prominent and highly esteemed practitioner of Philadelphia, died at his suburban residence in Delaware County last Sunday, aged sixty-seven years. Dr. Wilson graduated in medicine at the Jefferson Medical College in 1845. Early in his professional career he devoted himself to obstetrics, and he attained a large practice and high reputation in this department. He was formerly lecturer on obstetrics and diseases of women at the Philadelphia Lying-in Charity, and later one of the consulting physicians and president of the institution. He was a member of the American Gynecological Society, of the College of Physicians of Philadelphia, of the Philadelphia Obstetrical Society, and a Trustee of the Jefferson Medical College.

REVIEWS.

Cyclopædia of the Diseases of Children, Medical and Surgical. Edited by John M. Keating, M.D. Vol I. 8vo., pp. 992. Philadelphia: J. B. Lippincott Company, 1889.

We seem to be living in the days of encyclopædias; two on general practice, one each on obstetrics and gynecology, and, finally, the one under consideration. The large *Handbook on Diseases of Children*, edited by Gerhardt, first began to make its appearance twelve years ago, and at that time its chances of success were considered rather problematic. No one, in those days, dreamed of the possibility that in a comparatively short space of time a demand would come for an encyclopædia on the subject of diseases of children written by English-speaking authors. Yet such has been the case, and we see before us the first volume of nearly one thousand pages, to be followed by three more equal to the first in size.

It will be a matter of no little surprise to those who have not followed the development of the literature of pediatrics, when they see how much can be written upon diseases of children. Those, on the other hand, who are acquainted with the enormous strides that have been made within the last fifteen years, will, perhaps, be astonished that a few of the articles in this volume have not received more thorough treatment. However this may be, if we compare the present volume with that of Dewees (1833), or Eberle (1834), American books published in this country, or even with the classical book of West (first published in 1848), it soon becomes apparent how much pediatrics has developed among English-speaking people. We are not too bold when we assert that the most incomplete article of this volume is encyclopædic in comparison with the article upon the same subject in any one of the above-named books.

The effect that the publication of such a work as this encyclopædia must have upon the further development of pediatrics is incalculable. When once the attention of the medical public is called to a subject, its interest is quickly enlisted, and contributions soon flow in to help increase the general fund of knowledge. It has seemed to the writer that our physicians have been drifting in directions neither as useful nor important as pediatrics. Ovariotomists, abdominal surgeons, rhinologists, laryngologists, etc., are to be found in almost every small city east of the Mississippi River. Notwithstanding the assertion made by Jacobi in the splendidly written introduction to the

work, we believe the tendency now-a-days is toward specialism, and when the profession awakens to the fact that the subject of pediatrics is a specialty, broad, liberal, comprehensive, and one which cannot be acquired except as the result of evolution from general practice, it will not then be slow in availing itself of the opportunities afforded by such a work as the one under consideration. Again, not any one of the smaller works on diseases of children is satisfactory or adequate to the wants of the thinking physician. One difficult case elucidated by an author makes a whole volume valuable; the absence of discussion, of exceptions, or modifications, makes it valueless. In the present state of science, small books upon a great, broad, and comprehensive subject must be relegated to the class of text-books, the importance of which must not be underestimated. Every practitioner ought to develop beyond the state of relying upon text-books; for such, this book is invaluable.

It seems necessary to state that some weak articles will be found in a work written by so many authors. No book of cyclopædic character has ever been published in which the foregoing is not fully illustrated. If the volumes which are to follow will be as good as the one just published—and the names of the authors who will write for the forthcoming volumes seem to be ample guarantee for this—this *Cyclopædia of Diseases of Children* will be able to hold its own against any that has appeared.

The editor and publishers have every reason to congratulate themselves upon their success, and the profession ought to be grateful to them for a marked advance in science, as well as decided contributions to our knowledge.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting, held at Newport, R. I., June 25, 26, 27, and 28, 1889.

(Specially reported for THE MEDICAL NEWS.)

SECTION OF PRACTICE OF MEDICINE.

DR. FRANCIS DELAFIELD, of New York, read a paper on

CHRONIC ENDOCARDITIS,

in which he discussed why in some cases there are disturbances of the circulation, and why in other cases there are not. These disturbances are due to the endocarditis, the dilatation and hypertrophy of the ventricles, the inflammation or degeneration of the wall of the heart, inflammation of the coronary arteries, abnormal heart action, the associated pulmonary emphysema, chronic endocarditis, and chronic Bright's disease. These act singly or together.

The most important of these are the endocarditis, the abnormal heart action, and the secondary and complicating changes in the kidneys. These conditions he discussed at length, dwelling mainly upon the etiology and symptomatology of the affections.

DR. PEPPER was particularly glad to note the importance attached to the arterial changes in their bearing upon heart lesions. Doubtless when we have more exact knowledge of the changes which occur in the various ganglia of the heart, we shall find that they too play an important *rôle*. Just as recent observers have described changes in the ganglia of the kidneys associated with changes in the vessels and stroma of those organs, so it will undoubtedly be found that there are important changes in the cardiac ganglia which are associated with lesions of the valves or walls, and which exert an important influence on the production of symptoms. In regard to Dr. Delafield's distinction between a chronic inflammation and a deformity, it must be remembered that when only the latter remains, it is of an organ with the closest relations with life, and with the most important and ceaseless mechanical function to perform. The causes of endocarditis are numerous, and often obscure. It may be some antecedent infectious disease has left germs which are exciting morbid action there, and it is becoming clear that some trifling endocardial lesions may be roused into dangerous activity by the invasion of various germs. The relations of the endocarditis with nutritive disturbances, and the danger of recurring congestions and irritations, emphasize the importance of rigid regimen and treatment as long as evidences of active endocardial process are present.

When, however, we have only the results, in the shape of valvular disease, we have thoughts of fundamental importance quite aside from the question of medication. One of the most important concerns the mass of blood and its relations with the needs of the body and with the capacity of the cardiac apertures, and the capacity of the cardiac walls and cavities. The difficulty of the mechanical work which is performed by the crippled organ is determined by the friction to be overcome and the mass to be moved. The state of the arteries has a vital bearing upon this, as well as the mass of blood. Serious symptoms often persist until the latter is reduced by restricted diet, saline laxatives, or continuous venesection. He cited a case in which alarming symptoms of cardiac failure were relieved by epistaxis. If the body-weight be excessive, especially when owing to excessive adipose formation, great and unnecessary strain is thrown upon the heart. Hence it is often necessary to reduce the weight while improving the tone of the system. This is done by gradual exercise, passive or active, and, if necessary, by suitable remedies. Most important and essential is the improvement in the system's tone. Nothing is more injurious than the relaxed and oversensitive state of the system so commonly met with and often associated with the rheumatic diathesis.

DR. OSLER remarked that in the majority of cases of chronic endocarditis no symptoms are manifested. It is not the disease, but the gradual failure in compensation that causes the symptoms.

DR. JAMES TYSON, of Philadelphia, read a paper entitled

THE INDUCTION OF PREMATURE LABOR IN BRIGHT'S DISEASE OF PREGNANCY.

The procedure was recommended: 1. In cases in which in a previous pregnancy there has been puerperal nephritis with grave complications. 2. With a view of saving the life of the patient in all puerparæ in whom there is Bright's disease previous to pregnancy. He had had so many cases of this kind in which death followed upon the first confinement, that he had grown to regard the girl thus affected as walking to her death as she walks

to the altar, and, if the opportunity present, he discourages marriage in the strongest terms. Should it happen, however, that a girl thus afflicted does marry, she should never be allowed to go to term, but premature labor should be induced as soon as the fœtus is viable. 3. Those cases of puerperal nephritis not included in the first and second categories, viz., those in which we have not the knowledge gained by experience with a previous occurrence of the disease in the same patient, and those which are not primiparæ having Bright's disease previous to marriage. They include acquired puerperal nephritis in multiparæ where a previous labor has been accomplished without serious results. In this category no definite course can be laid down. In general, it may be said, that the supervention of uræmic symptoms demands immediate interference, but in consequence of the variety in these, and their occasional simulation by symptoms due to other causes, care must be observed lest an error in diagnosis be made.

As a rule, too, the same symptoms are more serious in robust, plethoric women than in the delicate and less hardy. Bright's disease acquired in the first pregnancy is a very much more serious complication than in a later one, and labor is rarely terminated without grave symptoms.

DR. VICTOR VAUGHAN, of Ann Arbor, stated that certain women always have uræmic symptoms. We do not really know what they are due to. He agreed with Dr. Tyson that premature labor should be induced early in these cases, because, if manifested once or twice, the affection will return, and sometimes very quickly. He cited the case of a woman who had been pregnant several times, and who suffered with convulsions during each pregnancy. During the last pregnancy, twenty-four hours after an examination had shown normal urine, albumin was found, and she passed into uræmic coma. According to his experience, it was wisest not to allow these patients to go to full term, except in primiparæ, in whom it was not justifiable to be too hasty. We know that the poisonous elements are formed from the proteids in the food and tissues. He thought that we could do much with diet in which the proteid food had been discarded, and with free elimination.

DR. I. E. ATKINSON, of Baltimore, thought that the question to discuss was, "Under what conditions are we justified in inducing premature labor?" It is just in primiparæ that we get the terrible results from puerperal convulsions. According to his experience the contracted kidney is the most prolific source of these troubles. Still many patients pass through this dangerous period with happy results. He, however, did not believe in one moment's delay after the mildest symptoms have become manifested. Those suffering with other forms than contracted kidney get along better, as a rule.

THURSDAY, JUNE 27TH.

DR. VICTOR C. VAUGHAN, of Ann Arbor, read a paper on

THE ETIOLOGY OF TYPHOID FEVER.

He stated that the Eberth bacillus is now generally regarded as the true cause of typhoid fever. He showed to what extent the four rules of Koch had been complied with in the study of this germ. After citing the observations of a number of authorities, he stated that the number of cases of genuine typhoid fever in which this germ has not been found when the examinations have been made by competent men is so small that we are justified in claiming that the first of Koch's rules has been complied with. That the second of Koch's rules has been complied with there is no doubt. Pure cultures of this germ are to be found in every bacteriological laboratory. It grows rapidly in our artificial media and its characteristics of growth are well known. He called attention to the most important of the numerous and interesting attempts which have been made to induce the disease in the lower animals by inoculation with the Eberth germ. Thereby it was shown that all attempts to accomplish this have so far been without success. Experiments show not only that the germ fails to multiply in the lower animals, but that, when introduced by inoculation, it soon dies.

The bacteriologist says here: "The lower animals do not have typhoid fever, and we must not conclude from the failure to induce this disease in lower animals with the Eberth germ that the bacillus is not the true cause of typhoid fever." If we could experiment upon man he would have no doubt that we would be successful. Hence, he wished to discuss this germ from the standpoint of a chemist.

He thought that it was now time for us to add to the rules of Koch the following: "Before any microörganism can be considered the true and sufficient cause of a given disease, it must be shown that the chemical products of that germ are capable of producing the characteristic symptoms and lesions of that disease in an acute form." This demonstration has been given in anthrax and tetanus. Recent extended researches by Brieger on this point failed to discover in cultures of the Eberth germ any real typhoid poison. With this in view we certainly cannot say that the Eberth germ has been demonstrated to be the true and sufficient cause of typhoid fever. He was forced, from the evidence at hand at present, to concur with Brieger, who is inclined to the opinion that Eberth's germ plays a secondary *rôle* in the causation of this disease.

Since, then, there seems to be very good reason for regarding typhoid fever as due to mixed infection it may not be without interest to inquire briefly into some of the experiments made with impure culture or with germs other than the Eberth. He detailed experiments by Murchison, Klein, and Bohardt, by feeding with typhoid stools, and those made by Motschutkoffski and Walder, by inoculation with blood of typhoid patients, which were unsuccessful. Birch-Hirschfeld's experiments were referred to, as also those of Brautlecht, who employed organisms obtained from drinking-water which had been used by those who subsequently had typhoid fever.

Drs. Vaughan and Novy obtained from drinking-water from Iron Mountain, where there had been a severe epidemic of typhoid fever, a germ which they could not distinguish, by microscopical appearance, reactions with staining reagents and growth in gelatine tubes and on potatoes, from the Eberth bacillus.

March 5, 1888, they inoculated three dogs with this germ taken from a beef-broth culture, twenty days old. The germs were washed with sterilized water, then suspended in the same menstruum and injected into the peritoneal cavity, all precautions, such as shearing off the hair, washing first with a solution of bichloride of mercury and then with alcohol, having been taken, and

neither at the point of inoculation nor anywhere else in the animals was there at any time any evidence of septicæmia. The dogs were placed in a large cage with a fourth one which was employed as a control. For some four or five days after the inoculations, they took the temperature of the animals daily, but there being no variation beyond the normal limits they supposed the experiment to be negative, and neither of them visited the animal room until the second day of April, twenty-eight days after the inoculation, when the janitor told them that one of the dogs had died and the two others had grown very thin and seemed to be sick. A post-mortem examination surprised them by revealing very prominently some of the lesions of typhoid fever. The animal was very much emaciated. Drs. Hendricks and Brewer were asked to make the post-mortem and the following is their report on the same:

"The weight of the body was twenty pounds. Upon the abdominal cavity being opened the mesenteric fat was observed to be pink with hemorrhagic spots. The bloodvessels of the intestines were found to be highly injected with numerous points of hemorrhagic infiltration. On the mesentery near the cæcum were large hemorrhagic spots. The lower inch and one-half of the ileum was distended and covered externally with clotted blood. The mesenteric glands were enlarged to four or five times their normal size and each contained hemorrhagic spots. The glands of the vermiform appendix were much enlarged and were pitted in the centre. Under the mesentery of the cæcum was a plastic exudate, almost transparent. The descending portion of the duodenum showed numerous bright hemorrhagic spots along the line of its junction with the mesentery.

"Along the upper portion of the ileum the intestine presented a greenish macerated appearance and a soft pultaceous feel. Air blown into the intestine escaped through the walls at this point. The mucous membrane of the ileum was swollen and Peyer's patches enlarged, but there were no distinct ulcerations. The liver was indurated and of a deep cherry color, weight twenty-three ounces. The kidneys were enlarged to twice the normal size and were dark in color. The spleen was enlarged and of a dark purple color. The stomach was contracted and its mucous membrane showed a few hemorrhagic spots. The lungs were normal and the heart in diastole and free from clots. The thymus and lymphatic glands were enlarged."

He regretted exceedingly that no attempt was made to obtain cultures from the mesenteric glands or spleen of this animal. The next day they took the temperature of the other dogs with the following results:

	No. 2.	No. 3.	Control.
April 3, 3.00 P. M.	105.0°	103.8°	100.8°
" 3, 5.30 P. M.	105.6	104.4	100.4
" 4, 9.00 A. M.	102.8	104.6	100.8
" 4, 3.30 P. M.	103.0	105.0	101.2
" 5, 10.00 A. M.	105.0	103.8	101.4
" 5, 2.30 P. M.	104.0	103.8	101.7
" 6, 9.30 A. M.	105.6	104.8	101.4
" 6, 3.00 P. M.	106.0	106.2	101.8
" 7, 2.30 P. M.	106.8	105.0	101.0
" 7, 7.30 P. M.	106.8	105.2	101.0
" 8, 11.30 A. M.		104.0	101.4
" 8, 6.00 P. M.		104.2	101.0
" 9, 10.00 A. M.		101.0	101.0
" 9, 6.00 P. M.		101.0	101.5

During the night of April 7th No. 2 died. The post-mortem revealed practically the same condition as found in No. 1, save that there was no perforation of the intestines. As is seen from above figures, No. 3 had no fever on April 9th, and remained in apparent health as long as he was under observation, which was until June 18th.

Twelve other dogs were inoculated April 18th with a subsequent culture of this organism. In four out of twelve the temperature at the end of the first week registered between 104° and 105°, by the close of the second week it had fallen to 103°, and during the next week became normal and remained so. In each of three others the highest temperature was 103.5°. The others were not apparently affected. Not only did the germ seem to lose its virulence, but it soon failed to grow in the culture tubes and died out altogether.

Notwithstanding the marked resemblance of these cultures to those of the Eberth germ, Dr. Vaughan concluded from the effects obtained that they were either a wholly different organism or an impure culture. He did not know that these experiments can be considered of any special importance, but taken together with those of Brautlecht, he thought that they give encouragement for further experiments with microörganisms which may be obtained from the drinking-water used by those who have typhoid fever.

During the past six months he had spent four or five hours a day upon the study of the etiology of typhoid fever, approaching the work from a wholly different standpoint from that indicated in the preceding pages. He began last December a chemical study of typhoid stools, with especial reference to the presence of ptomaines in the same. He soon met with great difficulty. In the first place, it was not always easy to have at hand material in sufficient quantity, and although friends practising where epidemics of the disease existed, kindly took the trouble to endeavor to supply him, this difficulty alone was sufficient to cause him to alter his plans. Moreover, the coloring matter present was taken up by his solvents, and it proved no light task to exclude them. He finally adopted the following method: The stools were received directly from the patient in a sterilized vessel. With a sterilized platinum needle flasks of meat-broth, previously sterilized, were inoculated with these stools. These flasks were then kept at a constant temperature of from 38° to 40° C., for varying periods of time, after which he attempted to isolate any ptomaines that might be present. Thus it will be seen that he worked with a mixed culture containing all germs present in the feces, the object being to ascertain whether or not the basic substance or substances formed in such cultures would differ from the ptomaines of Eberth's bacillus.

The method of isolating the ptomaine was as follows: After the cultures on meat broth had been kept in the incubator at the temperature of from 38° to 40° C. for from ten to twenty days, they were filtered and rendered feebly acid with hydrochloric acid. At this time the cultures were invariably ammoniacal. The acidified filtrate was then evaporated to dryness, or as nearly to dryness as could be done, on the water-bath. The residue was extracted with absolute alcohol, the extract precipitated with an alcoholic solution of mercuric chloride, saturated at the temperature of the water-bath, the precipitate was collected, washed with alcohol, sus-

pended in distilled water, and decomposed with hydrogen sulphide. The mercuric sulphide was removed by filtration, the filtrate evaporated to dryness on the water-bath, and this residue extracted with absolute alcohol, the extract precipitated with a solution of platinum chloride in absolute alcohol, the precipitate collected, washed with absolute alcohol and dissolved in distilled water. The aqueous solution was concentrated on the water-bath until the platinum compounds began to crystallize out. This aqueous solution contained two or more platinum compounds; but so far he had given his attention to only one of them. This forms in rhombic prisms which are purified by repeated recrystallization. For purposes of physiological experimentation, this platinum salt was decomposed with hydrogen sulphide, and the filtrate concentrated nearly to dryness on the water-bath, when the crystals form. This is the hydrochloride of the ptomaine.

The following experiments show the action of this ptomaine:

February 6, 1889. An aqueous solution, neutral in reaction, of this ptomaine was injected under the skin over the abdomen at 2.50 P. M. The temperature in the rectum before the injection was 100.5°. At 3.35 the temperature was 102.6°; at 4.10, 103.2°. About this time severe purging set in, and continued with intermissions and prolonged straining for an hour. At 4.35 the temperature was 103.4°; at 5, 103.9°; at 5.30, 104°; at 6, 103.9°. The temperature was not taken again until 9 A. M. Feb. 7, when it was found to be 102°; at 12, 101°; at 6 P. M., 100.5°. Between 2.50 P. M. and 5.30 P. M., or within two hours and forty minutes, the temperature of this animal went up 3.5°. The straining and purging were also marked.

May 18, 1889, he gave by the mouth an aqueous solution of the crystals to a dog, which weighed fifteen pounds. The rectal temperature before the administration of the poison was 101°; the time of administration, 3 P. M. At 3.15 retching and vomiting set in, and continued at intervals for more than two hours. At 3.30 the temperature was 103°, an elevation of 2° within a half hour. At 3.55 the animal began to purge, the first discharges contained much fecal matter, but the subsequent ones were watery, and some of them contained mucus plainly stained with blood. At 4 the temperature was 103.5°, and remained the same at 4.30. The animal was not seen again until 10 A. M. the next day, when its temperature was 100.5° and recovery seemed complete.

He referred to other experiments with this ptomaine, but as they were repetitions of the above in general, he did not detail them. He did not place any great stress upon the elevation of temperature when that was the only symptom, but when taken with the gastro-intestinal disturbances he thought he had reasons for hoping that the discovery of this ptomaine may prove of value in elucidating the etiology of typhoid fever. Of course, further experimentation is necessary. It remains to be seen whether or not typhoid stools invariably contain germs capable of producing this chemical product, also whether or not the same germs are contained in normal stools, or in those of any other disease than typhoid fever. Moreover, he hopes by means of making plate cultures to determine whether this ptomaine is the result of the activity of a single germ or of two or more microorganisms. The stools used in these experiments were from undoubted cases of typhoid fever and from three widely separated outbreaks of the disease.

Some of the conditions influencing the formation of this poison may be of interest. It was found most abundantly when the cultures were kept at a temperature of 40° C. for a period of ten days. After this time the amount of the yield grows less, though he has found traces after twenty days. He obtained larger quantities from cultures made on pork broth than upon beef broth, though the poison was never absent in the latter. From six quarts of pork broth he obtained as the greatest yield nearly two grammes of the platinum compound. Though he had made several partial ultimate analyses of the platino-chloride he was not quite ready to give a formula for this base, nor did he care to propose a name for it at present.

The platino-chloride crystallizes in fine rhombic prisms and the hydrochloride in red needles, which he showed. The red color seems to be inherent to the substance and not due to impurities. The hydrochloride obtained from the decomposition of the mercury compound has the same color as that from the platinum compound. The mercury and platinum compounds are insoluble in absolute alcohol, soluble in water. The hydrochloride is soluble in both water and alcohol.

DR. W. H. WELCH, of Baltimore, said that he must protest against accepting one condition which Dr. Vaughan formulated, viz.: "That before we admit that a certain microörganism is the cause of a disease, we must isolate from cultures of this organism chemical products which are capable by inoculation or feeding of producing the symptoms of the disease." It is certainly an important addition to our knowledge of a disease to become acquainted with such chemical products, but this is not essential to a belief in the causative agency of a specific organism. If Dr. Vaughan's condition be accepted as an essential link in the chain in proof, then we have no sufficient evidence that many recognized infectious organisms, such as the spirillum of relapsing fever, the bacillus of leprosy or even the tubercle bacillus are the causes of their respective diseases. From our present knowledge we are justified in believing that a microörganism which is invariably associated with a disease, which is found in the lesions of a disease and in situations which explain the symptoms and lesions, and which is never found except in association with the disease, must be regarded as the cause of the disease. Where, in addition to this, we are able by experiments on animals to reproduce the disease by inoculation of pure culture, this additional proof is most welcome. But in many infectious diseases we cannot furnish this last method of proof, either because we have not been able to isolate and cultivate the suspected organism, as is the case with relapsing fever, or because animals available for experiment are not susceptible to the disease, as seems to be true of typhoid fever and cholera. For this reason Koch has stated that it is not absolutely necessary that we reproduce the disease experimentally in animals by inoculation before we admit that a given organism found associated with a disease under the conditions stated is the specific cause of the disease. The evidence Dr. Welch believed to be conclusive, that the typhoid bacillus is the specific cause of typhoid fever. Dr. Vaughan's emphasis of the necessity of demonstrating the chemical products of pathogenic microörganisms

before we accept their etiological significance is based upon the assumption that infectious organisms produce their disastrous effects solely by their chemical products. But this assumption is quite unwarrantable; in fact, there is reason to believe that while some pathogenic organisms act by chemical products, others do not so act.

As Dr. Vaughan himself is doubtful as to the interpretation of his experiments on dogs, Dr. Welch was not inclined to attribute to them any bearing upon the etiology of typhoid fever, without further information than we now possess. Dr. Vaughan is to be congratulated upon the isolation from the typhoid stools of a definite crystalline substance with such interesting properties, but as Dr. Vaughan himself has stated, it will be necessary to make control chemical observations with diarrhœal and other stools not derived from typhoid patients, before the relation of this substance to typhoid fever becomes clear.

DR. VAUGHAN said that he would give his attention wholly to the criticism of Prof. Welch, who had said that the first of Koch's rules is all that is necessary in order to prove that a given germ is the cause of a disease: in other words, because Eberth's germ is found in every case of typhoid fever it must be the cause of that disease. He did not think that all the failures to induce the disease by inoculation with this germ are of any significance as to its cause. When Koch first promulgated his four rules, and pronounced that they must be complied with before the causal relation of a germ to a disease should be considered as demonstrated, the scientific accuracy of such a demonstration won the confidence of the medical world. Now, Prof. Welch says that three of these four rules are unnecessary. He claims that the presence of the Eberth germ in the altered tissue of typhoid fever is a proof that these germs cause typhoid fever. How does he know that the presence of the germ is the cause and not the result of the disease? He reaches this conclusion by reasoning from analogy. This kind of reasoning may have its value, but it is not scientific. Suppose that an inhabitant of some far-off planet should, by means of optical instruments, be able to discern the inhabitants of a certain portion of the globe. Suppose that the portion of the globe which should fall under his observation to be the frigid zone. Here he would find the inhabitants living in houses built of snow and ice, and, reasoning by analogy, he might conclude that all the inhabitants of the earth live in houses of this kind. The reasoning of Prof. Welch is just as unscientific as that in the supposed case of the planetary observer. Condensed, his reasoning would be about as follows: (1) The bacillus of consumption is found in every case of consumption, and the Eberth germ is found in every case of typhoid fever. (2) The bacillus of tuberculosis has been demonstrated to be the cause of consumption. (3) Therefore, the Eberth germ is the cause of typhoid fever.

DR. J. C. WILSON, of Philadelphia, presented a paper on

THE PROPHYLAXIS OF TUBERCULOSIS.

In it the following questions were submitted to tests for settlement: 1st. Is pulmonary consumption hereditary? 2d. Is it contagious? 3d. Is it preventable?

After thoroughly sifting all evidences offered for the first question, he affirmed that pulmonary consumption, subjected to the tests by which we determine the question in regard to the infectious diseases in general, does not appear to be hereditary in the ordinary sense, and that the congenital predisposition to the tuberculous disease is much less general than to several other infectious diseases, notably the eruptive diseases of childhood.

As to the second question, he summed up his researches with the statement that tuberculous diseases respond in every important particular to the tests by which we determine the contagiousnes of the other infectious diseases. Tuberculosis is transmitted by inoculation, by direct contact, by means of food and drink ingested; finally, by means of the respired air.

In the discussion of the third question he remarked that the chief avenues of contagion are the digestive and respiratory tracts. Tuberculosis is acquired by infected foods and by the inhalation of air containing tubercle bacilli and spores. The rigid inspection of all cows in dairies and of all animals slaughtered for food and the destruction of those found to be infected would constitute the chief measure of prophylaxis as regards infection by food. A second measure would be the systematic care of the milk until consumed.

Reduced to its simplest form, the problem of prophylaxis against the spread of the tuberculous diseases among human beings consists in the proper care of the fresh expectoration of consumptives. Not dangerous while moist, it becomes, when dried, the chief means of the spread of the disease, from the lesions of which alone it is derived. It should be collected in suitable vessels and kept in a moist condition until it has been destroyed by fire or discharged into sewers under such conditions as will insure its conveyance to places where it is not likely to become a source of danger. Spitting upon the floor, or in the streets, or into handkerchiefs or towels, should in all instances be avoided. Suitable cuspidors should be used at home and pocket spit-cups carried when without. An individual who is well on the road to recovery, may, by self-inoculation, if he do not with the greatest care destroy his sputum, diminish greatly his chances of recovery. The early recognition and treatment of pulmonary consumption constitute in themselves an important measure of prophylaxis.

DR. STOCKTON took issue with the author on one point —*i. e.*, diathesis. He quoted a case occurring in an orphan asylum, in which a single child was attacked with acute tuberculosis, while no other child was ill. Why was this so? It can be explained on no other ground except lack of resistance. It seems so evident that something beside contagion is concerned in the etiology of tuberculosis that the causes may be divided into two classes: 1st, contagion, and, 2d, non-resisting soil.

DR. SOLLY, of Colorado Springs, thought that he had observed in Colorado strong evidences of the contagious character of the disease. It was found occurring in all individuals, and attacking any one with the slightest exciting cause.

DR. HERRICK was not ready to accept absolutely the contagious character of tuberculosis. It might be a matter of mental deficiency on his part, still a large number of facts were to him not explicable.

DR. SOLIS-COHEN, of Philadelphia, said that the last speaker need not fear being accused of mental deficiency so long as one of the great medical minds of the century, Dr. B. W. Richardson, of London, occupied the same

position of wholesome scepticism. It would be a mistake to assume that the infective action of microbic parasites is the sole cause of consumption. There are other parasites—the entozoa, which descending from non-parasitic organisms have, through the circumstances attending their evolution, taken upon themselves the parasitic cycle. As Dr. Vaughan's investigation proceeds in the one direction to determine in what way bacteria are toxic, so we may look in the other direction to see which preceded chronologically, the microörganism or the disease, alike in the life of the individual and in that of the race. May we not conceive that their evolutionary history is like that of the entozoa; that, originally innocuous, they found in the degenerated tissues of disease a favorable environment, and thus took up their parasitic cycle, gaining, perhaps, a certain power of carrying infection. He did not deny their infectious power, but he did submit that the evidence of their sole power of originating disease is not conclusive. The evidence as to consumption seems to indicate an hereditary diathesis, an hereditary failure of nutrition, and that upon this bacillary tuberculosis becomes engrafted as an epiphenomenon.

DR. WILSON, in answer to Dr. Stockton's remarks, stated that there are cases of tuberculosis as incapable of explanation as some of the single cases of typhoid fever occurring in a locality. The tubercular nature of the disease is demonstrated. Those who do not accept the doctrine have nothing to offer in its place.

DR. SOLOMON SOLIS-COHEN then read a paper on

FOOD IN THE TREATMENT OF PULMONARY CONSUMPTION.

Though the paper is therapeutic, yet, as therapeusis must be founded on sound pathology, it is necessary to state that the morbid physiology of the disease, and not its bacteriology, is considered the fundamental indication. In deference to prevailing views, tuberculosis may for the present be granted to be the history of the growth, life, and activity of a bacillus. But for rational treatment we must revert to the views of Niemeyer, who said that the danger of phthisis is tuberculosis; or to those of Rush, who declared that tubercle and other anatomical lesions were "the effect, not the cause of pulmonary consumption;" and recognize the disease we have to combat not in epiphenomena of possible microbic origin, but in the consumption, the aberration of nutrition, which precedes the entrance of the microbe. Consumption is a disease of nutrition, whose exact mechanism is as yet unknown, though the results of prolonged observation justify us in considering heredity, unhygienic surroundings, and, in general, those influences called "depressing," as among its remote or proximate causes; the pulmonary form being further dependent upon errors in respiration, whether of the substances respired or of the performance of the act.

Thus we dismiss as futile, microbicidal treatment; and recognize ptomaines of bacillary origin only as giving rise to intercurrent symptoms which may call for antidotal or symptomatic treatment. Fixing attention upon the malnutrition, which is not a mere "predisposition" to succumb to a bacillus, but the essence of the whole morbid process, we combat it by direct measures, hygienic and medicinal; the latter secondary, the former all-important. Chief among hygienic measures is food. Food consists not alone of meat and drink, but also of air. Full respiratory diet is necessary to the utilization of alimentary diet. As in diabetes, so in phthisis, there is imperfect metabolism of carbohydrates. Experience shows a nitrogenous dietary to be best. Debove has shown that consumptives can assimilate a quantity of food far in excess of the needs of the healthy organism. This excessive quantity should be supplied; though resort to the stomach-tube, as in Debove's experiments, can be reserved for special cases.

Meat, principally beef, with milk, fish, eggs, leguminous vegetables and greens, should form the bulk of the dietary; with the addition of fat, in large quantities, in the form of cream, butter, oil dressing for salads, or, if necessary, cod-liver oil or oleaginous inunctions. Alcohol is a food in consumption. It should be taken with malt, milk, cream, glycerine, or cod-liver oil. Not more than three, at most four, hours except during sleep, should be allowed to elapse without taking food. Milk-punch on going to bed, and a glass of wine or spirits with liquid peptonoids in case of waking during the night, were strongly urged. Hot water before meals, lavage if necessary, to prepare the alimentary tract for the digestion and absorption of increased food, and the free drinking of water to wash out waste products, are essential to success. Predigested foods may be employed with great benefit, especially peptonized milk and beef peptonoids. In case gavage is resorted to, they should be used almost exclusively. Gavage is best preceded by lavage with an alkaline solution and chloroform water.

Proper alimentary diet being secured through overfeeding, and the digestive tract and its adnexa being kept in good condition, proper respiratory diet must be supplied. Open-air life, exercise on horseback, or bicycle, voluntary respiratory gymnastics, may suffice when the patient is still strong enough. In the majority of cases there must be some artificial aid. The inhalation of compressed air, with or without expiration into rarefied air is the best means. Apparatus should be simple and cheap, so that the patient can use it at home. The principles laid down by Waldenburg are the correct ones. Cohen's apparatus consists of a bellows and a small gasometer modelled upon Waldenburg's. Its advantages are cheapness, simplicity, and small size, fitting it for home use. After patients are sufficiently advanced toward recovery, the pneumatic resistance valves of the author, a still more convenient and very cheap pocket apparatus (costing about five dollars) may be used. It may be used in the first instance with strong patients. It is also useful as a prophylactic measure with ill-developed children. It gives the effects of breathing against pressure—*i. e.*, into compressed air, or out of rarefied air.

The effects of pneumatic measures are to increase the volume of respiratory air, open up unused air-cells, facilitate expulsion of pathological products, increase gaseous exchange, facilitate absorption of oxygen by the hæmoglobin, while, at the same time, the volume of blood and the activity of circulation in the lungs are increased, bringing more corpuscles into contact with the increased volume of oxygen. Penetration of blood into the tissues, tissue respiration, and production of lymph, are also increased. Thus local and general nutrition are powerfully stimulated, and an improved respiratory habit, and increased respiratory and circulatory power are gained. The products of digestion are properly oxidized and

utilized, immature tissue is destroyed and expelled. The promotion of sleep is one of the most marked effects.

The physician puts them, by altering his patients' environment in the manner described, into a condition where natural powers complete the cure, and bacilli need not be feared. Illustrative cases were cited, and the conclusion reached that the proper treatment of consumption is not microbicide, but nutrition.

AMERICAN NEUROLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Long Branch, N. J., June 26 and 27, 1889.

(Continued from page 27.)

JUNE 27TH.—MORNING SESSION.

DR. GEORGE W. JACOBY, of New York, read a paper entitled

A CONTRIBUTION TO THE STUDY OF ANÆSTHETIC LEPROSY, WITH SPECIAL REFERENCE TO PARTIAL SENSORY DISORDERS.

The points to which particular attention should be paid in all cases were, the electrical excitability of the muscles, the condition of the reflexes, the presence or absence of fibrillary twitchings, and the condition of sensation. Upon these data depended the diagnosis between anæsthetic leprosy and syringomyelia, as well as that of the central or peripheral localization of the leprous process. The conclusions arrived at by the author from the analysis of his own and other cases were, that the differential diagnosis between the two diseases could not always be made; that partial sensory disorders are not characteristic of syringomyelia, but may occur in anæsthetic leprosy as well as in purely peripheral affections; and, finally, that a differential diagnostic point between central and peripheral loss of temperature sense may lie in its complete loss in one case, and its partial in the other.

DR. STARR said that the same question as to the differential diagnosis between syringomyelia and anæsthetic leprosy had only recently occurred to him. Three weeks ago he had seen a case with Dr. Prince A. Morrow, of New York, in which there had been a gradual onset of an atrophic and anæsthetic affection of the right arm. He came from the Sandwich Islands, and had been exposed to leprosy. There was anæsthesia to temperature and pain, but not wholly to touch, along the hand and part of arm. There were three small reddish-brown spots on the arm, which Dr. Morrow considered leprous in character. The idea of syringomyelia at once occurred to him, but the history of exposure in a leprous country sufficed to make anæsthetic leprosy at least the more probable nature of the disease; but without such history it would have been almost impossible to make the diagnosis. As to the matter of partial loss of sensation, in the cases of multiple neuritis and *beri beri* he had seen, the sensory loss was complete, with the exception, however, of muscular sense.

THE PRESIDENT remarked that he had now under observation a case of leprosy, but had as yet made no careful examination of the temperature sense. His case illustrated the ease of diagnosis at an early period, when confusion with syringomyelia could not occur. The patient had a wine-colored eruption on the entire left leg and part of the thigh, the foot being free, and there were three or four similar spots on other parts of the body. There was distinct analgesia and some anæsthesia in these areas, but there was no paralysis or atrophy. The patient had come from the Sandwich Islands. The well-defined limitation of anæsthetic areas showed that it could not be neuritis. Of late, the anterior leg muscles had become paretic, but there was no reaction of degeneration. The left hand was beginning also to manifest similar symptoms. There were no ulcers.

DR. C. K. MILLS had seen two cases of leprosy. He thought the author's point with regard to partial sensory disorder very interesting, but he did not see why there should not be partial disturbance also in neuritis, and, in fact, in traumatic neuritis it was quite frequent. The nature of the sensory disturbance depended upon the extent of the injury to the nerve. In ordinary multiple neuritis it might be true, as Dr. Starr insisted, that there was complete loss of sensation, through destruction of all the sensory fibres. He did not see, however, why the sensation to cold should not be injured as much as any. It should be borne in mind that in all infectious diseases attacking the nervous system, there was a tendency to seize upon the central as well as the peripheral portions at the same time.

DR. GRAY agreed with the last speaker as to partial sensory disorders met with at times in peripheral neuritis. He had observed it also in multiple neuritis where, for instance, there was impairment of touch and temperature sense, yet the pain was excruciating. He did not see that it was easy to diagnosticate syringomyelia, and Wichmann and Starr had given no rules for diagnosis in their pamphlets. He believed that no one had made a diagnosis of syringomyelia in life.

DR. STARR stated that Schulze had made the diagnosis in three cases, which had been substantiated by autopsy. The points for diagnosis were the general conclusions drawn from a study of collected cases. Anna Baumler had brought together one hundred and sixteen cases, to which thirty or more had since been added.

DR. GRAY thought these diagnostic points would apply to many other spinal lesions.

DR. BIRDSALL had had similar ideas to those of Dr. Gray as regarded the diagnostic indications in syringomyelia until he had read Roth's collection of cases. In a certain number of such cases there were clinical pictures differing altogether from other spinal lesions and from peripheral neuritis. Disturbance of the temperature sense was the particular characteristic. Still, the testing of this sense had been constantly neglected in studying other spinal cases, and it was possible that it might often be disturbed in other spinal disorders. It was hard to see how any other lesion could produce precisely the same symptoms as those of syringomyelia. It was a question whether tracts for temperature and pain could be localized in the cord. Peripheral nerve lesions might cause injury to some sense fibres and not to others, although generally all are injured, particularly where the inflammation is truncal in character. There might be partial sensory disturbance in dermal forms.

DR. GRAY said it was easy to localize disease in the anterior cornua, in the lateral and posterior columns of the cord, but the diagnosis of central lesions was very difficult. The fact that out of one hundred and fifty cases of syringomyelia only three had been diagnosticated during life proved the truth of his assertion. The

diagnostic suggestions given were, therefore, empirical. The presence or absence of temperature sense had not been sufficiently tested as yet. How would one distinguish a chronic central myelitis?

DR. BIRDSALL stated that central myelitis began acutely and thus differed from the slow advance of syringomyelia.

DR. MILLS thought the question of partial sensory disorder most interesting. But he thought that there would be more apt to be partial disturbance in a truncal neuritis than in a dermal.

DR. PETERSON asked the President if the tendon reflexes were exaggerated in his case of leprosy, and was answered in the affirmative. He had asked this because he had recently read an interesting study of the reflexes in anæsthetic leprosy made by Dr. Suzuki, of Tōkyō, and published in the *Sei-I-Kwai Medical Journal*, in which there was an analysis of seventeen cases. One had normal reflexes, while all the others had increased tendon jerks, and in some of the cases there was even ankle-clonus. The conclusions arrived at by the author were similar to those of Dr. Jacoby.

The PRESIDENT called attention to the fact that so many cases of leprosy were now being continually imported into the United States. It seemed as if the country were threatened with its domiciliation. It was a question whether it was not the duty of physicians having such cases to report them to the authorities.

DR. SINKLER mentioned the recent presence of two cases in Philadelphia. The physician in charge had been fined by the Board of Health for not reporting them.

DR. PRINCE wondered at the manner in which leprous patients were allowed to go about, and thought also that the attention of the authorities ought to be called to the disease, and reports to the Boards of Health ought to be required.

DR. GRAY knew that in the East where the disease is prevalent, isolation is practised. He wished to know what the actual danger of contagion was.

DR. BRILL said that the attention of the New York Board of Health had already been called to the matter.

DR. JACOBY, in closing the discussion, said that Schulze was altogether too positive in his assertions. This author went so far as to contend that cases of leprosy where cavities had been found in the cord were not leprosy at all but syringomyelia. As for himself, he thought a central lesion probably often exists in this disease, although it is well known that the essential pathology lies in a truncal neuritis. A simple dermal neuritis could not be assumed in leprosy. In his case, for instance, the indurated and swollen ulnar nerve could be distinctly felt. He did not agree with Dr. Gray that the diagnosis of syringomyelia could not be made. The only danger lay in mistaking it for leprosy. He had, only last evening, come across a work of Suzuki mentioned by Dr. Peterson, and had noticed the identity of the conclusions of that author with his own, although they were reached from different points of view.

DR. F. X. DERCUM, of Philadelphia, then presented two contributions entitled, respectively,

A DESCRIPTION OF TWO CHINESE BRAINS

and

A NOTE ON THE PLI DE PASSAGE INFERIEURE INTERNE IN THE HUMAN BRAIN.

He exhibited the brains described. Dr. Mills had made a morphological analysis of one in 1886, and descriptions of three Chinese brains had been added to literature by Moritz Benedikt. The six brains thus far analyzed exhibited unusual complexity due to excessive sinuosity of the gyri, and a tendency to excessive transverse fissuration. The frontal lobes were especially large and complex. There was unusual confluence of fissures indicative of a low degree of development, such as is often seen in the negro's and sometimes in the white man's brain. There was unusual length of the parallel and Sylvian fissures, and eversion of the orbital and temporal lobes.

DR. MILLS said that it was very important to keep adding to our morphological descriptions of such brains, until accurate deductions could be drawn from a very large number.

DR. SPITZKA stated that the dictum that a tendency to confluence of fissures indicated a low type of development was not accepted by most anthropologists. The more brachycephalic the skull, the greater was the development of transverse secondary folds. The elephant, which stands among the highest of mammals, has a broad skull and a tendency to confluence of fissures. The Chinese were not low in development. The internal pli de passage in the negro and idiot was significant only when the general cortical development was poor. The real cause of the location of the chief sulci lay in the inherent architecture of the brain, and was due to the arrangement of groups of cells and fibres, but the secondary and tertiary sulci might be influenced by other factors, such as the course of vessels. While we might never be able to localize the higher functions of the mind, there was something in the physiognomy of the Chinese brain which struck him as differing altogether from that of the Caucasian. But it was not the same difference as was noticeable between the negro and Caucasian brains. The peculiar moral attitude of the Chinese pointed to some relation between the structure of their brains and the character of their minds. Still, he had observed a great difference between these two Chinese brains, and there was no feature in them which might not be reproduced in the Caucasian brain.

DR. DERCUM had not wished to imply that transverse fissuration was indicative of a low type, but thought the unusual confluence showed a lack of cortical development. He did not consider them brains of a low type, but many features such as were found in the brains of the negro and ape were found here also. The excessive sinuosity, however, indicated a higher cortical development. For instance, in one brain there were five well-developed frontal gyri.

DR. SPITZKA had the same idea as Dr. Dercum. As compared with the Caucasian brain, the Chinese was in some respects inferior, and in others exhibited a superabundance of gyri. He spoke of the resemblance between the negro and ape brains. The differences between the brains of the ourang-outang and chimpanzee were greater than those between the brains of the chimpanzee and a human being. There was no uniform appearance of the ape's brain. Voigt and another had classified the human brain into three types: the Negro, Mongolian, and Caucasian, corresponding somewhat to the three lower types of the gorilla, chimpanzee, and ourang-outang.

DR. M. ALLEN STARR, of New York, then read a paper entitled

THE PATHOLOGY OF SENSORY APHASIA, WITH AN ANALYSIS OF FIFTY CASES IN WHICH BROCA'S CENTRE WAS NOT DISEASED.

In all of these cases collected by the author some form of sensory aphasia was present, and in all the lesion lay in the posterior lower third of the brain. In seven of the cases there was pure word-deafness, and in these the lesion was limited to the posterior portion of the first and second temporal convolutions. In eleven cases there was pure word-blindness, and in these the lesions were found distributed either in the angular gyrus, the occipital lobe, the temporal convolutions, or the inferior parietal region.

In seven cases word-deafness and word-blindness were coexistent, although the use of language was not lost; and in these the temporal convolutions were involved, extending in some to the inferior parietal, angular, and occipital convolutions. The practical application of the localization of aphasia lesions is obvious, for the regions concerned in speech are especially accessible to the surgeon.

Another fact of interest is, that it seems to be proven that there is no ideational centre. Any idea may be impaired, but cannot be wholly destroyed, by a single cortical lesion. Thought being regarded as the play of consciousness along association fibres between sensory centres cannot be localized.

DR. LLOYD had now a case of simple homonymous hemianopsia without psychical or word-blindness, and wished to know whether there was any diagnostic importance in this condition as to localization. Was there a preponderance of one hemisphere over another as regarded sensory memories of language?

DR. STARR said that the matter of psychical blindness had recently been discussed by Wernicke and another. A lesion affecting bilaterally both occipital lobes or the association tract produces psychical blindness, but a lesion along either tract itself does not cause this condition. Nine cases of psychical blindness from lesion of one hemisphere alone had been reported.

THE ELECTION OF OFFICERS FOR THE ENSUING YEAR

being then in order, the following were chosen:

President.—Dr. E. C. Spitzka, of New York.

Vice-Presidents.—Dr. Wharton Sinkler, of Philadelphia; Dr. H. M. Lyman, of Chicago.

Secretary and Treasurer.—Dr. G. M. Hammond, of New York.

Councillors.—Dr. Henry Hun, of Albany; Dr. C. L. Dana, of New York.

(*To be concluded.*)

NEWS ITEMS.

An International Courtesy.—Under this heading the *British Medical Journal* of July 6th contains the following editorial:

DR. BILLINGS, the accomplished American physician, whose address at the International Medical Congress in London excited much admiration, and whose works are well known and greatly esteemed by all of us, has recently passed through London—where he has been the guest for a few days of Dr. Ord—on his way to Oxford, to receive there the distinction of an honorary degree in law at the annual encænia. Being charged with the preparation of the forthcoming census of the United States he could make but a brief stay, and is already on his way home, otherwise we might have hoped to have seen him at our London meeting.

Few could have deserved this new honor better. Dr. Billings is still a comparatively young man when the work which he has done, the position which he fills, and the honors which he has obtained are considered. He was born in Indiana in the year 1838. He took his degree of M.A. at Miami University, Ohio, and the degree of M.D. at Cincinnati, Ohio, in the year 1860. In the next year the war of secession broke out, and he entered the Federal military service. His energy and abilities at once marked him as a man to whom serious responsibilities should be entrusted. He was Medical Inspector of the Army of the Potomac in 1863 and 1864. He served with the Federal army in the field, being present at the battles of Chancellorville and Gettysburg, and subsequently took part in General Grant's fighting in Virginia. His talent for organization found ample field in the development of the great field hospitals, with their thousands of wounded and sick. After the war he and others were occupied in creating that monumental record—the great *Medical and Surgical History of the War of the Rebellion*. This work could only be accomplished with the aid of the Government, and this was dispensed to Dr. Billings and his colleagues with a generosity which has enabled them to produce a work than which none other of like magnitude, completeness, and merit exists. It will prove for many years to come, as it has already proved, a treasure-house of information.

A work not less important, and perhaps more after his own heart, has been the making of the Army Medical Museum and Library, at Washington. The museum is really a wonderful thing for its age, both from the quantity and quality of the material arranged in it. It has been now transferred from the old threatre building in which Lincoln was murdered to the palatial structure on the shore of the Potomac, specially built for it under Dr. Billings's direction. Here, too, the wise liberality of the Government is displayed in the completeness of the arrangements and the great expenditure they have entailed. Here, too, are many rooms where, under the supervision of its head, much good work is being accomplished.

It is, we believe not too much to say that the library of the Army Medical Department is the largest and most complete medical library in the world. It, likewise, owes its development to the fostering care of Dr. Billings. It contains not only all the best modern books and periodicals in every language, but a collection of the classic works of every kind connected with medical knowledge of our forefathers in scientific work. Not only is it free to everyone to enter, but to any part of the great United States books from this library are forwarded on application to any duly qualified man. The losses which this entails are stated to be infinitesimal. The crown has recently been placed on another great work fostered by Dr. Billings in the opening of the Johns Hopkins Hospital at Baltimore, built from his plans and under his supervision, an account of which he recently published.

No expense has been spared in the successful attempt to make this the most perfect of modern hospitals.

Amid all this primary official work he has found time for other offices and for the production of books. He has been Vice-President of the National Board of Health. He had charge of the vital statistics of the tenth census, bringing out a report in two large volumes. He has also charge of the vital and mortality and social statistics of cities for the approaching census of the United States.

With all this important occupation Dr. Billings's official rank is less high than is generally supposed in this country. He is Major and Lieutenant-Colonel and Surgeon in the United States Army.

Dr. Billings has also done great service to the whole of the medical profession by his *Index Medicus*, begun in 1879, and still in regular publication. He is now preparing a large dictionary of medical terms, in two volumes, which is to appear speedily.

With such a record, it is not to be wondered that the University of Oxford, wherein all that Dr. Billings has done is well known to Sir Henry Acland, should have deemed him worthy of the high honor of its D.C.L., thus adding his name to those of Owen, Alison, Brodie, Milne Edwards, Van der Hœven, Christison, Stokes, Jenner, Gross, Paget, Lister, Allen Thomson, William Farr, Simon, and others to whom she has given in the last few years her highest degree. Besides this honor, he already holds the honorary degrees of LL.D. Harvard, LL.D. Edinburgh, and M.D. Munich, and he is a member of the National Academy of Sciences in America, which may be in many respects compared to our Royal Society.

How various are the ways by which scientific medicine is being advanced is plain enough to our readers. It is pleasant to think that the United States are advancing along the whole line of knowledge. It is of no small moment that Washington, but lately only a political capital, is becoming a centre of scientific biological effort, through the rapidly expanding National Museum, and the labors of Dr. Billings in the War Office. The probable effects cannot easily be overestimated. The problem of the future of the United States is one of the most interesting, as well as the newest, in the history of the human family. The modern appliances for material growth there seen have never in history been so rapidly developed, and we are glad that a firm grasp is likely to be taken by our American brethren of all of the circumstances that effect the progress of scientific, curative, and preventive medicine.

The Archduke Carl Theodor of Bavaria has been dangerously ill with lymphangitis of the arm and axilla, following inflammation of the hand, due, it is supposed, either to the sting of an insect or to a wound received during an operation. His Highness has now recovered sufficiently to resume surgical practice at Meran. — *British Med. Journal*, June 22, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 2 TO JULY 15, 1889.

GIBSON, R. J., *Captain and Assistant Surgeon.*—Reports arrival, July 2, 1889, at Camp Lewis, Fisher's Island, New York, in compliance with Par. 5, S. O. 133, Division of the Atlantic, which designated him as Medical Officer for the encampment (rifle practice) at Fisher's Island, New York.

GORGAS, W. C., *Captain and Assistant Surgeon.*—Is granted leave of absence for one month, to take effect on the arrival of a medical officer to relieve him.—Par. 2, *S. O. 84, Headquarters Department of the Missouri*, July 3, 1889.

By direction of the Secretary of War, ANDREW V. CHERBONNIER, *Captain and Medical Storekeeper*, will, in addition to his present duties, take charge of the office and perform the duties of Acting Assistant Medical Purveyor in St. Louis, Missouri, during the absence of Captain George T. Beall, Medical Storekeeper.—Par. 2, *S. O. 151, A. G. O.*, July 2, 1889.

By direction of the Acting Secretary of War, the retirement from active service this date, by operation of law, of THOMAS A. MCPARLIN, *Colonel and Surgeon*, under the provisions of the Act of Congress approved June 30, 1882, is announced. Colonel McParlin will repair to his home.—Par. 2, *S. O. 157, A. G. O.*, July 10, 1889.

TOWN, FRANCIS L., *Lieutenant-Colonel and Surgeon.*—Promoted Surgeon, with rank of Lieutenant-Colonel, to rank from July 10, 1889, vice A. K. Smith, promoted.

SMITH, ANDREW K., *Colonel and Surgeon.*—Promoted Surgeon, with rank of Colonel, to rank from July 10, 1889, vice McParlin, retired.

PERLEY, H. O., *Captain and Assistant Surgeon.*—Is ordered to accompany troops from Fort Wayne, Michigan, to Gognac Lake, Michigan, to encamp there with the Michigan State troops, from August 8 to 13, 1889.—Par. 1, *S. O. 154, Headquarters Division of the Atlantic*, July 9, 1889.

PERLEY, H. O., *Captain and Assistant Surgeon.*—Is granted fourteen days leave of absence, to commence about July 14, 1889.—Par. 2, *S. O. 154, Headquarters Department of the Atlantic*, July 9, 1889.

BRECHEMIN, LOUIS, *Captain and Assistant Surgeon.*—Ordered to the Illinois National Guard, near Springfield, Illinois, during the remaining portion of the encampment.—Par. 1, *S. O. 159, A. G. O.*, July 12, 1889.

BALL, R. R., *First Lieutenant and Assistant Surgeon.*—Is granted leave of absence for fifteen days.—Par. 3, *S. O. 87, Department of the Missouri*, July 9, 1889.

INES, F. J., *Assistant Surgeon.*—Now at Fort Lyon, Colorado, will proceed to camp near Oklahoma City, Indian Territory, and report to the commanding officer for duty, relieving W. C. Gorgas, Captain and Assistant Surgeon, who, when so relieved, is authorized to avail himself of the leave of absence granted him in Par. 2, S. O. 84, *c. s.*, Department of the Missouri.—Par. 1, *S. O. 87, Department of the Missouri*, July 9, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE TWO WEEKS ENDING JULY 13, 1889.

WHITE, S. STUART, *Assistant Surgeon.*—Ordered to the Naval Hospital, Brooklyn, New York.

WHITE, C. H., *Medical Inspector.* — Detached from the "Trenton," and wait orders.

NORFLEET, ERNEST, *Passed Assistant Surgeon.*—Detached from the "Trenton," and ordered to the "Monocacy."

AMES, H. E., *Passed Assistant Surgeon.*—Detached from the "Monocacy," proceed home, and wait orders.

HARMON, G. E. H., *Surgeon.*—Detached from the "Constellation," and ordered to the Naval Academy.

LOWNDES, C. H. T., *Assistant Surgeon.*—Detached from the "Constellation," and ordered to the Naval Academy.

HARVEY, H. P., *Surgeon.*—Detached from the "Vandalia" July 7th, proceed home, and wait orders.

WHITE, S. STUART, *Assistant Surgeon.*—Detached from the "Trenton" July 7, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, JULY 27, 1889. No. 4.

ORIGINAL ARTICLES.

THE MORTALITY OF ACUTE LOBAR PNEUMONIA,

From a Study of All the Cases of this Disease Treated at the Massachusetts General Hospital from the First Case, in 1822, up to the Present Day.[1]

BY C. W. TOWNSEND, M.D.,
AND
A. COOLIDGE, JR., M.D.,
OF BOSTON.

THAT acute lobar pneumonia is treated to-day far differently than was the same disease fifty years ago is a well-known fact. Has there been any change in the mortality for the better or worse; and, if so, is this change due to the treatment alone, or is it dependent rather on the changed conditions of life and constitution of the patient, or is it due to any change in the nature of the disease itself?

These and similar questions present themselves, and cannot be answered by a superficial examination of mortality statistics, but demand a thorough examination of the individual cases. To make entirely plain what is meant by this statement, let us illustrate by the following example: Suppose ten patients sick with pneumonia were treated every year at a hospital, and that in the year 1860, of these ten patients, two were over sixty years of age, two were hard drinkers, and two had organic disease of the heart; while in the year 1880 nearly all the pneumonia patients happened to be healthy young adults, an entire change in the treatment having at the same time taken place. It is evident that the death-rate in these two years would be very different, a difference which a superficial observer might claim to be due to the change in therapeutics. But if, instead of merely examining the list of diseases and results, he had examined the record of each case, it is possible he would have come to a far different conclusion.

At the suggestion of Dr. H. I. Bowditch and of Dr. F. C. Shattuck, and with the permission of the resident physician, Dr. J. W. Pratt, the writers have examined the records of the Massachusetts General Hospital from its first books in 1821 to the present time (May 1, 1889), for the purpose of throwing some light, if possible, on these questions.

But before considering the results, it may be well to review briefly some of the papers which have recently appeared discussing the same subject from data obtained from other hospitals. Dr. Hartshorne, in a paper read before the College of Physicians of Philadelphia, in February, 1888, apparently succeeded in demonstrating that the mortality from pneumonia has greatly increased. In the quarter of a century prior to 1858, he finds from a large number of statistics of cases reported by Skoda, Balfour, Dietl, from the British and United States armies, from European hospitals, and from the Pennsylvania Hospital, that the mortality from acute pneumonia was only 8⅓ per cent. This certainly contrasts in a striking way with the present mortality, which was found by the Collective Investigation Committee,[1] in an analysis of 1066 cases, to be 18 per cent., and which Dr. Hartshorne has found to be stated at about 25 per cent., or more, in the large general hospitals in this country. He thinks that the disease is now practically the same as it was forty or fifty years ago, and that the increase in mortality is due to the change in treatment. To show the great evils of opium, Dr. Hartshorne gives such statistics—among others—as the following: One case in 12.56 died where the treatment consisted of bleeding and the use of tartar emetic; while where opium without bleeding was used, as many as 1 case in 3.3 died. Such statistics, it seems to us, are worse than valueless, for not one word is said as to whether the cases were old or young, feeble or strong, debilitated by alcoholic habits or not; neither do they take into consideration a possible variation in the severity of the disease, a fact which is generally recognized in the study of other specific diseases.

Dr. William Osler[2] gives a striking illustration of the worthlessness of statistics taken without such analysis for the purpose of defending a theory, by figures taken from the same hospital (Pennsylvania Hospital), for a different series of years, which, far from showing, as do Dr. Hartshorne's figures, that the mortality has increased, show that it has, if anything, been reduced, as will be seen by these figures:

DR. HARTSHORNE'S STATISTICS.		DR. OSLER'S STATISTICS.	
Years.	Mortality.	Years.	Mortality.
1845–'47	6.25 per cent.	1848–'50	37.9 per cent.
1865–'67	18.50 "	1858–'60	21.2 "
1884–'86	31.00 "	1868–'70	22.8 "
		1878–'80	32.7 "

Of 704 cases treated at the Pennsylvania Hospital since 1845, Dr. Osler finds a mortality of 29.1 per cent.

[1] Read before the American Climatological Association, June 24, 1889.

[1] The Collec. Invest. Record, vol. ii., July, 1884.

[2] University Medical Magazine, November, 1888.

Dr. Osler also gives, without special analysis, the mortality of the Montreal General Hospital and the Charity Hospital of New Orleans, as follows:

MONTREAL GENERAL HOSPITAL.		CHARITY HOSPITAL, N. ORLEANS.	
Years.	Mortality.	Years.	Mortality.
1853–'63	16.2 per cent.	1830–'39	44.6 per cent.
1863–'73	16.1 "	1840–'49	35.3 "
1873–'83	23.7 "	1850–'59	32.2 "
1883–'87	20.3 "	1860–'69	43.9 "
		1870–'79	40.2 "

Out of a total of 1012 cases at the Montreal Hospital, since 1853, there was a mortality of 20.4 per cent.; of 3969 cases treated at the New Orleans Hospital, 38.01 per cent. were fatal. The increasing death-rate from north to south, as illustrated by these hospitals, is interesting.

Osler also gives figures from the Edinburgh Infirmary as follows:

Before 1848, mortality in 567 cases . .	36.3 per cent.
1848–1856, " " 611 " . .	21.2 "
1856 upwards, " " 548 " . .	12.7 "

A further analysis of these cases might show that this decrease in death-rate was deceptive.

Dr. Gouverneur Smith,[1] in a recent article, says that the lowest mortality from pneumonia, at the New York Hospital, occurred in the decade between 1820 and 1830; that the mortality has been rising since then, and has during the last decade reached its acme, considerably over double the earlier percentage. As he truly remarks, however: "Hospital statistics, in order to afford valuable scientific data, must be sifted and classified in groups of cases." He then goes on to say: "Without any such general and accurate figures to guide us relating either to hospital or private practice in this country, but from such sources of inference as are at hand, and from observation, it is now an accepted fact that the death-rate from pneumonia is much greater at present than it has been hitherto." This, to say the least, is a very sweeping assertion.

Recognizing the great danger of fallacious reasoning from hospital statistics, the writers have endeavored, with minds freed as much as possible from preconceived ideas, to analyze each case of acute lobar pneumonia that has been entered in the record books of the Massachusetts General Hospital. In the earlier years the table of diagnoses in the end of each record book was found to be often unreliable, and they were obliged to make their own diagnosis directly from the records. Thus, before 1830, clear cases of acute lobar pneumonia were often found among the diseases entered as "empresma pleuritis," all of which, therefore, had to be examined for this purpose. On the other hand, cases entered as pneumonia, or "empresma pneumonitis," in these earlier days were often clearly cases of broncho-pneumonia or of phthisis. It is evident, therefore, that statistics drawn up from the list of cases of pneumonia as entered in the table at the end of each record book would show very different results in the earlier years from those we have obtained by a decidedly longer process.

Added to these difficulties was the fact which one can hardly realize now in the day of careful record of physical signs, namely, that before November, 1864, there is no record of the temperature of the patient, and the first temperature chart was made in February, 1867, but these charts did not come into regular use until several years later. Then, too, in the earlier days, examinations with the stethoscope were first coming to be practised, and were entered in the record book as if they were a great curiosity, as these records certainly are now. In cases entered before 1835 there was often no record of physical signs, and we were obliged to infer the seat of the lung lesion from the description of the symptoms. The prolixity of the earlier records, extending over a number of pages, and the unmethodical and, as compared with recent records, unscientific manner of recording facts is very striking. It is often said that as we depend at the present day so much on the observation of instruments of precision, like the thermometer, we neglect to observe the patient; but the writers were both impressed with the abundance in the earlier records of unessential details, and the absence oftentimes of important symptoms and phenomena which should have been noted.

After these introductory and explanatory remarks let us examine the cases.

The Massachusetts General Hospital was opened for patients in 1821, and from January, 1822, when the first case of acute lobar pneumonia was admitted, up to the present time, May 1, 1889,[1] exactly one thousand cases of this disease are to be found in the records of the hospital. Of this number, two hundred and fifty were fatal, or exactly twenty-five per cent. of all cases.

The following table shows the total number of medical cases in the hospital for each year, also the number of cases of pneumonia and the number of deaths among the latter.

As until very recently the total number of cases each year was too few from which to draw conclusions of any value, we have divided the figures into periods of ten years, making seven decades in all from 1822 to 1889.

[1] Medical Record, October 20, 1888.

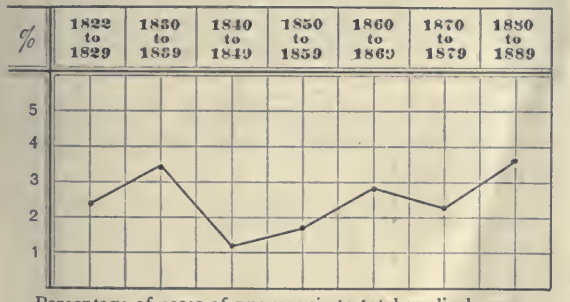
[1] The writers were obliged to wait till this late date, May 1, in order to obtain just one thousand cases. It may be remarked here that the writers examined independently alternate volumes of the records, and were interested to find how closely their number and percentages corresponded.

TABLE SHOWING NUMBER OF MEDICAL PATIENTS AND OF CASES OF PNEUMONIA IN THE MASSACHUSETTS GENERAL HOSPITAL FOR EACH YEAR.

Year.	Number of medical patients.	Cases of pneumonia.		Year.	Number of medical patients.	Cases of pneumonia.	
		Total.	Died.			Total.	Died.
1822	67	2	1	1857	418	7	1
1823	111	1	0	1858	456	19	4
1824	225	0	0	1859	530	11	3
1825	229	6	0	1860	494	15	6
1826	321	8	1	1861	543	10	2
1827	339	5	0	1862	606	13	4
1828	291	16	3	1863	703	28	7
1829	354	11	0	1864	669	24	6
1830	287	7	1	1865	390	10	2
1831	326	18	2	1866	377	9	0
1832	318	10	1	1867	459	7	2
1833	328	7	2	1868	456	12	3
1834	335	15	4	1869	544	19	7
1835	311	13	2	1870	518	11	2
1836	326	6	0	1871	563	18	0
1837	255	10	2	1872	652	21	2
1838	208	6	3	1873	691	12	4
1839	211	7	1	1874	740	20	8
1840	205	2	0	1875	852	24	8
1841	217	1	1	1876	829	20	4
1842	189	7	2	1877	687	11	6
1843	186	4	1	1878	713	17	6
1844	242	2	1	1879	658	15	1
1845	225	2	1	1880	814	33	6
1846	238	6	1	1881	830	27	8
1847	309	3	0	1882	796	38	11
1848	414	7	0	1883	701	26	9
1849	448	4	1	1884	803	39	13
1850	335	4	0	1885	918	57	16
1851	412	3	0	1886	930	39	5
1852	382	2	0	1887	1140	55	21
1853	470	6	4	1888	1285	72	21
1854	443	7	0	1889			
1855	402	5	3	to	.....	39	7
1856	440	8	4	May 1			

Incidentally, we find a very varying proportion between the number of cases of pneumonia and the total admissions as shown by Chart 1.

CHART I.

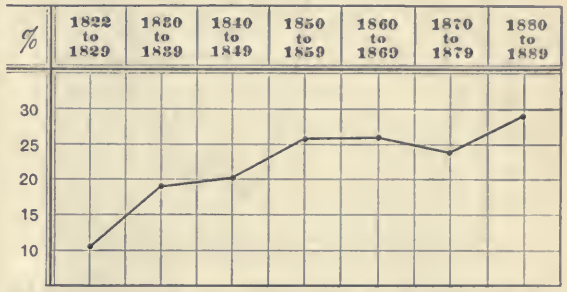


Percentage of cases of pneumonia to total medical cases, in decades.

It will be seen that in the last decade a proportionately larger number of cases of pneumonia have been admitted. It is hardly fair to conclude from this, however, that pneumonia has become more prevalent, as we must remember that with the modern ambulance system many very sick patients are taken to the hospital, while in former years the absence of this system would prevent many who were taken sick with this disease of sudden onset from receiving hospital care. In the 1830 decade, however, nearly as large a percentage of pneumonia cases were admitted to the hospital, while the lowest percentage occurred in the '40's.

A glance at the table giving the cases and mortality in each year shows great variations; in some years no deaths having occurred from pneumonia, in other years a large proportion were fatal. Arranged in decades and represented graphically we obtain the following chart:

CHART II.



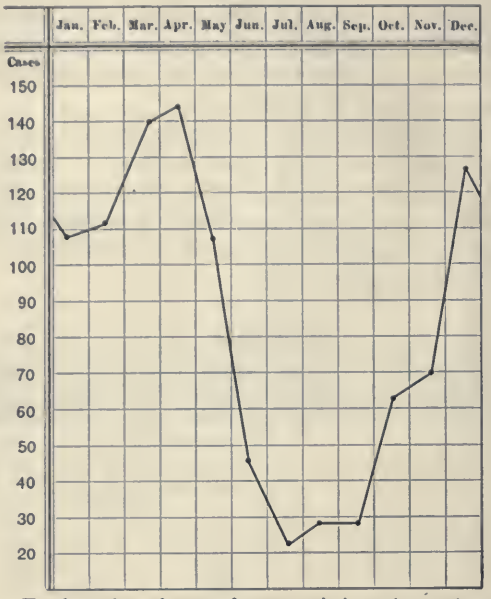
Percentage of deaths from pneumonia to all cases of pneumonia, in decades.

This shows an almost unbroken rise in the mortality from ten per cent. in the 1820 decade to twenty-eight per cent. in the present decade. From this we might infer that pneumonia is much more fatal now than it was fifty years ago, and much more fatal fifty years ago than it was seventy years ago, and that its fatality is steadily increasing—a conclusion well calculated to alarm and depress us.

As we have urged in the introductory part of this paper, conclusions like this should not be drawn until we have examined each individual case, else we may be entirely misled. We all know that the treatment of pneumonia, as of other diseases, has radically changed during the period of years we are considering, but before appealing to this factor as a cause of the change in mortality, let us examine the other factors, which perhaps may partly or entirely be the cause.

We have noted in each case the age, sex, race, previous condition, whether healthy or delicate, whether temperate or intemperate in the use of alcohol, and also the presence or absence of complications. All these are factors of more or less importance in their relation to the mortality. We have also noted the month of the year and the site of the lesion of the lung, together with the duration of the fever, till death or recovery, and the length of stay in the hospital. The month of the year and the site of the lung lesion, although having but little bearing on the present discussion, are of interest for statistical purposes, and are, therefore, recorded here in the following table and chart:

CHART III.



Total number of cases of pneumonia in each month.

A comparison of this chart with one prepared by one of the writers[1] from an analysis of 412 cases occurring at the Massachusetts General Hospital between 1870 and 1885, shows a great similarity. We calculated the per cent. fatal in each month, but from the irregularity of the results concluded that they were of no significance.

TABLE SHOWING PORTIONS OF LUNG INVOLVED IN ORDER OF FREQUENCY.

Seat of lesion	Total.	Died.	Per ct. fatal.
Lower right lobe	337	47	14
Lower left lobe	216	28	13
Both lungs	111	63	57
Upper right lobe	105	25	24
Whole right lung	74	39	53
Whole left lung	39	26	67
Upper left lobe	31	7	23
Middle right lobe	19	4	22

We determined the day of death in all the fatal cases, where this was possible, and found, as shown by the following table, that the eighth day was the one on which most deaths occurred.

TABLE OF DAY OF DEATH.

3d day	7	cases, or	3 per cent.
4th "	7	" "	3 "
5th "	19	" "	7 "
6th "	14	" "	6 "
7th "	19	" "	8 "
8th "	31	" "	13 "
9th "	26	" "	11 "
10th "	22	" "	9 "
11th "	17	" "	7 "
12th "	10	" "	4 "
13th "	7	" "	3 "
14th "	9	" "	4 "
3d week	23	" "	9 "
4th "	7	" "	3 "
5th "	5	" "	2 "

[1] C. W. Townsend: An analysis of 412 cases of lobar pneumonia, etc. Boston Med. and Surg. Journal, March 25, 1886.

The duration of the fever could not, before the days of the thermometer, be determined with accuracy, but the following table gives this as nearly as possible.

TABLE OF DURATION OF FEVER.

4 days in	15	cases, or	2.3 per cent.
5 "	35	" "	5.3 "
6 "	55	" "	8.4 "
7 "	116	" "	17.7 "
8 "	119	" "	18.2 "
9 "	88	" "	13.4 "
10 "	79	" "	12.0 "
11 "	46	" "	7.0 "
12 "	29	" "	4.4 "
13 "	19	" "	2.9 "
14 "	26	" "	3.9 "
15 "	12	" "	1.9 "
16 "	5	" "	0.7 "
17 "	5	"	
18 "	2	"	
19 "	2	"	
20 "	3	"	
21 "	4	"	
Over 3 weeks in	12	"	

Of 212 occurring between 1870 and 1885, 128 cases ended by crisis and 84 by lysis.

Of the two sexes, there were 724 males and 276 females, of which 182, or 25 + per cent. of the former, while 68, or 25 — per cent. of the latter were fatal. The great preponderance of males, about four times as many, is due to the fact that in early years there were, we believe, larger accommodations for male than female patients, and, as a rule, men with acute diseases are perhaps more likely to be taken to a hospital than women. The British collective statistics from private practice show, however, a similar but not as great disproportion between the two sexes; they record about twice as many males as females. As the mortality in the two sexes was in our cases the same, although usually stated to be higher in females, the factor of sex is excluded in our search for the cause of the increase in the fatality of the disease.

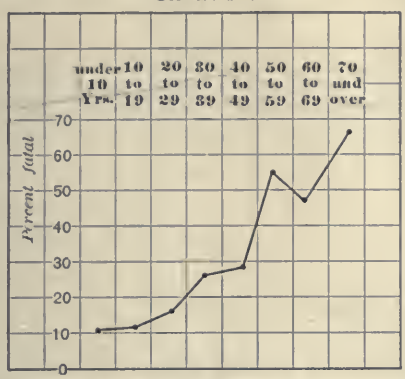
The factor of age is, however, one of great importance, as shown by the following table, and graphically by Chart IV.

Age of patient.	Total cases.	Fatal.	Per ct. fatal.
Under 10 years	10	1	10.0
10 to 19 "	113	12	10.6
20 " 29 "	373	69	18.5
30 " 39 "	217	55	25.3
40 " 49 "	136	40	29.2
50 " 59 "	80	44	55.0
60 " 69 "	32	15	46.9
Over 70 "	12	8	66.7

It will be seen that up to the age of 49 years the mortality gradually increases from 10 per cent. to 29 per cent. After this age it makes a sudden jump of over 20, and rapidly rises above 50 per cent. As only ten cases occurred under 10 years of age, it is hardly fair to lay much value on this mortality rate of 10 per cent., which is probably too high. The

only fatal case in this class was a child 2½ years old, emaciated and enfeebled from previous neglect and bad treatment.

CHART IV.

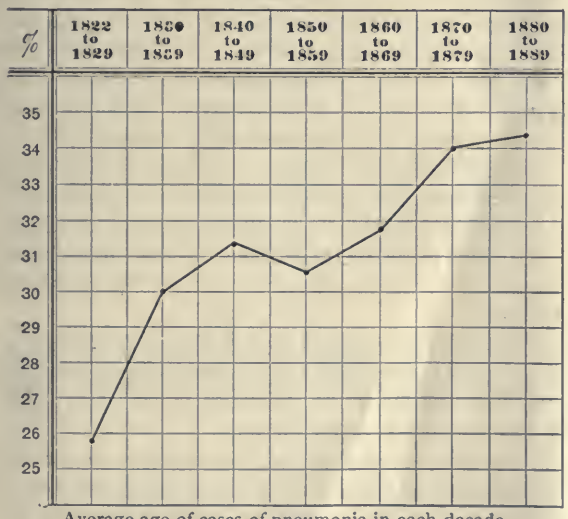


Mortality at different ages.

The break in the rising line of mortality in those between 60 and 69 years of age may be explained by the fact that 60 per cent. of these patients happened to be neither complicated nor intemperate, while of those between 50 and 59 years of age only 55·5 per cent. were free from complication or intemperance. A similar chart in the analysis of 412 cases previously referred to, corresponds almost exactly with Chart IV, but the fall at 60 years does not occur.

Now, an examination of the hospital records shows not only a proportionately greater number of patients over 50 years of age in the latter decades, but the average age, as will be seen by Chart V., has steadily increased from 25½ years in the '20 decade to 34½ years in the '80 decade.

CHART V.



Average age of cases of pneumonia in each decade.

Here, then, is one cause at least for the higher death-rate in later years, and one which is, of course, entirely independent of treatment.

A complete record of the condition of the patient previous to the attack of pneumonia would be of great value, but, unfortunately, was not kept in many of the cases. 445 of the patients were stated to have been healthy; of these, 62 died, or 14 per cent., a percentage considerably under the average. 67 were stated to have been delicate, no especial disease existing; of these, 26 died, or 39 per cent. 161 had acute or chronic complications, and of these, 59 died, or 37 per cent. The complications, with the number of deaths in each, are given in the following table:

TABLE OF DISEASES COMPLICATING PNEUMONIA.

Disease.	Total cases.	Number fatal.
Asthma	6	4
Bleeder	1	0
Bronchitis, chronic	11	5
Cardiac disease	18	5
Delirium tremens	23	15
Diabetes	1	0
Diarrhœa (severe)	6	3
Embolism, cerebral	1	1
Embolism, pulmonary	1	1
Emphysema	2	1
Empyema	6	3
Erysipelas, facial	1	0
Gangrene of lung	3	3
Gastro-duodenal catarrh	1	0
Hiccough (persistent)	1	1
Hemiplegia	1	1
Hemiplegia following pneumonia	1	0
Idiocy	2	2
Intermittent fever	13	3
Lateral curvature	1	1
Measles	2	1
Meningitis	1	1
Nephritis	9	4
Pericarditis	3	2
Peritonitis	2	1
Perityphlitis	1	1
Phthisis	22	7
Pleurisy with effusion	17	4
Pott's disease	1	1
Pregnancy with miscarriage	2	2
Pregnancy without miscarriage	2	0
Rheumatism, acute	8	1
Surgical injury	1	1
Typhoid fever	22	10
Total complications	193	85
Counted twice	32	26
Total patients with complications	161	59

55 were recorded as temperate in the use of alcohol, of whom 8 died, or 15 per cent., while 109 were intemperate, and 45 died, or a mortality of 41 per cent.

The influence which the presence or absence of complications, of good health and of temperance have on the mortality of acute pneumonia is a fact well recognized, and is duly emphasized by the above analysis. We must next find whether complications and intemperance are more or less prevalent among pneumonia patients at the hospital now than they were in former times.

An objection will undoubtedly be raised here that in former days complications were not so readily recognized as at present, and that particularly in post-mortem examinations the pathologist almost always finds some abnormal conditions which were passed over in silence because not recognized in the older records. Therefore, we should expect to find complications more prevalent in later years. As we felt the danger of this, we think we have avoided it by recording only those cases as complicated where the diagnosis was plain, and where the lesion, if observed post-mortem, was a gross one, and one that was as easily recognized by early as by late reporters. We think all will admit this on examining the list of complications. The complication emphysema, it seemed to us, might be rather too fine a diagnosis for our list, but of the two cases one occurred in the '30 decade and one in the '80 decade, so this certainly ought to remain. Pericarditis, another example, occurred once in the '30, once in the '60, and again in the '80 decade.

Diarrhœa is entered in our list, but only the very severe and generally chronic cases are there mentioned, for a slight or moderate diarrhœa is, as is well known, a not infrequent symptom in pneumonia.

Many of the complications, as will be seen, are chronic, antedating the attack of pneumonia, while the rest, with but few exceptions, although acute, are entirely accidental and independent of the pneumonia. The exceptions, gangrene of the lung, empyema, and in some cases pleural effusion, being a part, as it were, of the pneumonia, should perhaps have been excluded, as it may be said that their occurrence may have been due to the treatment; but these cases are so few in comparison with the others, and are so evenly distributed through the decades, that they will not influence the results.

The following table shows the number of cases that were complicated or simply delicate, and the number intemperate in each decade.

	1822 to 1829.	1830 to 1839.	1840 to 1849.	1850 to 1839.	1860 to 1869	1870 to 1879.	1880 to 1889.
Complicated or delicate,	6	11	6	15	39	37	114
Intemperate,	0	2	2	8	18	12	66

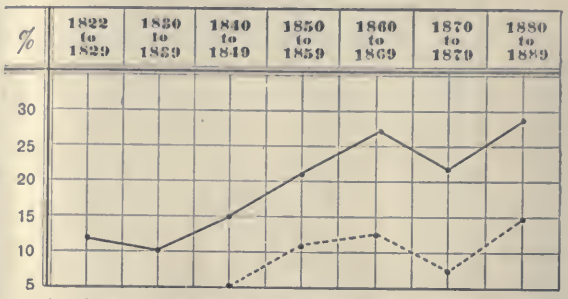
Calculating the percentage of these cases to the total number of cases of pneumonia, we find that this percentage, both of the complicated and delicate and of the intemperate, has been increasing, as shown by Chart VI.

The only remaining factor is that of race, and our 1000 cases are divided as follows:

	Total cases.	Fatal.	Per ct. fatal.
American (including Canadians)	463	103	22
Irish	371	94	25
Other foreigners	119	36	30
Not recorded	47	17	36
Total	1000	250	Aver. 25

This table shows the least fatality among the Americans, a greater fatality among the Irish, and a still greater one among other nations; but we have no right to infer that the race factor itself is the

CHART VI.



Ratio of the complicated and delicate cases to total number of cases of pneumonia, represented thus.—— Ratio of intemperate cases to total number, thus. . . . .

cause of this difference. Patients of foreign birth who are taken to the hospital are perhaps of greater age, or more liable to have complications or to be intemperate than those of American birth, and these factors may account for the difference in mortality. It occurred to us, therefore, that it would be interesting to see what the percentage of mortality would be in the different races, omitting all those fatal ones who were over fifty years of age who were intemperate, delicate, or complicated, factors which we have shown are sufficient cause for a large mortality. The results obtained are as follows: Americans, 9 per cent. fatal; Irish, 11 per cent. fatal; other foreigners, 14 per cent. fatal. Comparing these percentages with the former ones, we find that the proportionate mortality of the different races remains almost as before, with the exception that Americans are even more favored than by the first analysis, while among foreigners, with the exception of the Irish, the mortality is proportionately greater than before. The reason of this may be that our most poorly nourished classes are largely foreigners.

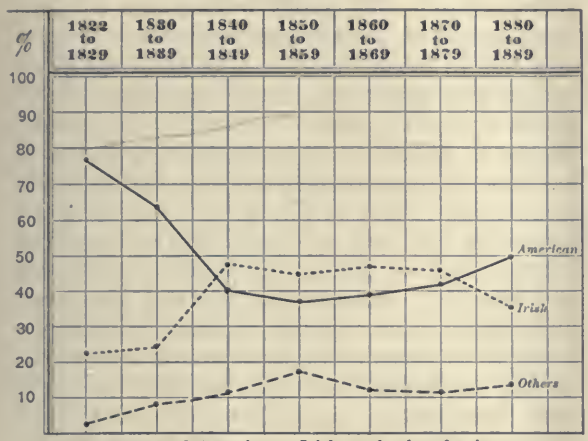
During the early part of the century American patients were, of course, more abundant, relatively, than they are now; a fact which is shown by Chart VII., which gives the percentages of the three classes among the pneumonia patients in the hospital by decades.

From the descriptions of the disease contained in the records there seems to be no reason for thinking that the character of pneumonia has susceptibly changed in this series of years.

To sum up the results of the analysis, so far, we may say that the sex of the patient has in these cases no influence on the mortality; that the age of the patient is of great significance—the older the patient the greater the mortality; and that over the age of fifty years more than fifty per cent. die; that intemperate patients are far more apt to die than tem-

perate patients; and that the mortality in the patients who are delicate or who have some complication is much higher than in the healthy and non-compli-

CHART VII.



Percentage of Americans, Irish, and other foreigners, by decades.

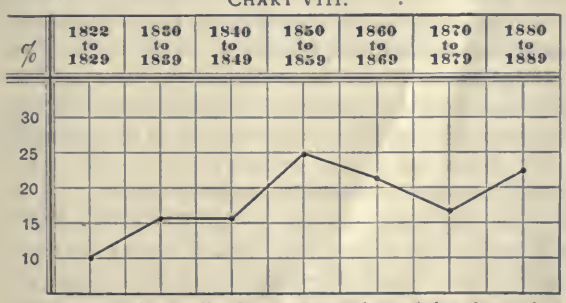
cated; and, finally, that the proportion of deaths among Americans is less than among Irish, and in these latter less than among other foreign nations, and that this difference is not dependent as far as our studies show, on the existence of more frequent complications or intemperance among foreigners.

We have also seen that the average age of the pneumonia patients has been steadily increasing from the earliest decades of the hospital to the present day; that the relative number of intemperate and of delicate patients has increased, and also of cases complicated by other diseases, and, finally, we have seen that the proportion of foreign-born patients has also increased.

Let us see how much influence each of these factors has had in increasing the mortality from pneumonia in the hospital, and whether it is possible that all of them together may not be the whole cause, and that it will not be necessary, as might have been our first impulse, to appeal to the change of treatment as the cause of this increase in the mortality.

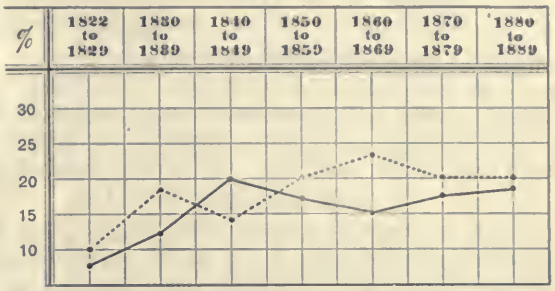
In order to learn the answer to these questions we have prepared the following charts which we think explain themselves:

CHART VIII.



Percentage of mortality from pneumonia, omitting those who died over fifty years of age, by decades.

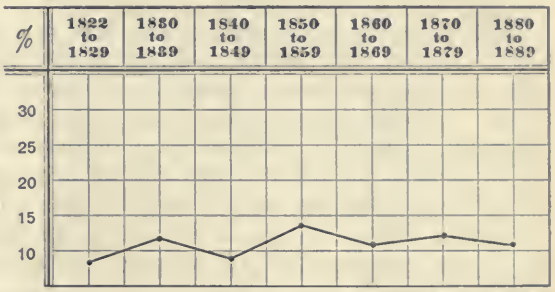
CHART IX.



Mortality, omitting the delicate and complicated who died, represented thus ————

Mortality omitting the intemperate who died thus .....

CHART X.



Mortality by decades, omitting all fatal ones who were over fifty years of age, or were delicate, complicated, or intemperate.

This last chart represents, then, the mortality in the hospital by decades, excluding all cases whose death can reasonably be accounted for, that is to say, all who died who were over fifty years of age, were intemperate, delicate, or who had complications. As will be seen, instead of showing as in Chart II., a regular and decided increase in the mortality from the earlier part of the century to the present day, it shows but little variation from decade to decade, and we certainly could not infer from this chart that the mortality from pneumonia had on the whole changed in the last sixty-eight years.[1]

We must conclude, therefore, that, as shown by this analysis, the mortality of acute lobar pneumonia at the Massachusetts General Hospital has remained practically the same from 1822 to 1889, notwithstanding the great changes in treatment, and that the disease is the same now as it was sixty-eight years ago. This result, although not very encouraging, is certainly far better than was the hasty conclusion drawn from the mortality table alone before analyzing the cases.

But are we to infer that treatment is of no avail? Has it not had any influence on the duration of the disease or of the convalescence, and how has the general condition of the patient in these two stages

[1] It is probable if we had taken into consideration the increase in foreigners and the decrease in Americans of late years, that Chart X. would have been more nearly a horizontal line than it is now.

been influenced by the treatment? A short *résumé* of the treatment at different periods is necessary before we can answer these questions.

Prior to the year 1850 the treatment was truly heroic; almost every case was vomited and purged, given mercury to salivation and sore gums, blistered with cantharides, and bled. Of the 187 cases before 1850, 115 or nearly two-thirds were bled. The quantity of blood taken was often large. In 1833 one case was bled three times to the total amount of fifty ounces, and forty-eight leeches in all were applied during his illness. Another case was bled during his illness sixty ounces, or nearly two quarts. Local wet-cupping and leeching at the same time with venesection were also used.

The diet in this period was a low one, as can be seen by the following examples taken from the records: "May have juice of quarter of an orange at a time." "May have a teacup of milk three times daily with cracker." "May have broth not exceeding four ounces and repeat in four hours if he wants it." This low diet was also continued into the convalescence. Thus, in 1849, a patient on the fifth day of the convalescence was allowed "Broth six ounces at noon."

In the '40's mercury and emetics were less frequently used, but the patient was still given tartrate of antimony and kept on the verge of vomiting. Blisters at this time were also gradually omitted and replaced by sinapisms.

Cantharides, besides producing much local effect, was a frequent cause of strangury, so that catheterization had to be resorted to. The sores made by the blister were irritated by various drugs in order to obtain a more intense effect, so that gangrenous sloughs and ulcers slow in healing were not infrequent results. During the convalescence such records as these were not uncommon: "Complains of nothing but ulcer left from blistering." "The black slough from the blister beginning to separate."

Cathartics were given freely, not only in the hospital but before their arrival there. One case, a man of twenty-three years, was said to have had fifty dejections on the third day of the disease after taking cathartics at his home, and it seems as if the fatal result might be attributed to this.

Before 1850, opium was scarcely ever used, and in no case was the treatment an expectant one. The occasional use of colchicum and other drugs was noticed. Stimulants during the period before 1850 were almost never given, and then only in minute quantities, generally just before death. For example, one of the earliest mentions of its use is in 1839, when the following record occurs: "May have a tablespoonful of cider." In another case: "Wine whey if skin becomes cold;" this was given a few hours before the patient's death. As another example, may be mentioned a patient forty-four years of age with a complicating pericarditis and the history of a cough for ten years, who was kept on a low diet, was bled, vomited, purged, and blistered, and was not given any alcohol. The patient died.

From 1850 to 1860 seems to have been a transitional period in the hospital treatment of this disease, and for the first time we meet with cases which were treated practically in an expectant manner, 11 out of 72 cases being so treated in this decade. Opium in occasional moderate doses, generally in the form of Dover's powder, was then used for nearly the first time; syrup of Tolu and "fever mixtures" containing nitre were also given, and an occasional administration of quinine and veratrum viride was also noticed. Less than one-third (19 cases) were bled, and the other heroic measures were proportionately decreased. Alcohol was used more frequently just before death, but the fear of giving it while there was fever is evident from such a record as this in 1858: "May have cider ℥vj or ℥viij in the twenty-four hours if no more fever."

Soon after 1860, the records show that pneumonia patients were being systematically fed with milk and broths. Heroic treatment became a thing of the past, emetics, cathartics, mercury, and blisters being discarded, and there are records of but six cases of venesection after the year 1860, and leeches were used in only a very few. Alcohol was given systematically from this time. Of 741 cases treated since 1860 there is record of the use of alcohol in 353 cases. A comparison of the mortality of those to whom stimulants were given and those treated without them would be useless, for the more severe and feeble cases were given alcohol, and nearly all received it before death.

The treatment by drugs was slight after 1860. In the 60's and early in the 70's wine of ipecacuanha in small doses was largely used. After 1875 carbonate of ammonium was the drug most frequently prescribed. Opium was given in many of the cases, generally in moderation, to relieve pain. Digitalis was also used to some extent. There are but very few records of quinine in the large doses sometimes used in New York and elsewhere. In the last few years antipyrin and acetanilid have been used in a few cases, but we may say that, as a rule, since 1860 the treatment of pneumonia at the hospital has been largely sustaining and expectant.

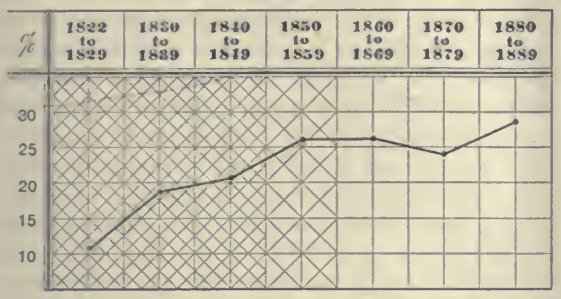
A glance at Chart XI., which is the same as Chart II., but shaded to indicate the periods of different treatment, shows that the entire rise in the mortality took place during the period prior to 1860, when the treatment was entirely or partly heroic.

This fact alone, even if we had not demonstrated the same truth by another method, shows the entire lack of connection between the mortality rate and the method of treatment.

Is it possible that the heroic treatment contained

both bad and good elements, which by counteracting each other, gave, as we have seen, exactly the same results as by the expectant method; and, therefore, if the bad elements were eliminated we

CHART XI.



Same as Chart II., also showing periods of treatment. Before 1850 heroic; between 1850 and 1860 transitional; after 1860 expectant.

should have better results than by the expectant method? In the light of our present knowledge of the bacterial nature of the disease, is it possible that the germicidal mercurial treatment constituted the good element?

After this digression let us now answer the questions as to the duration of the disease and of its convalescence as affected by treatment. We obtained the average duration of the fever and found it to vary in each decade but a small fraction from nine days. The duration of the convalescence also, as shown by the length of stay in the hospital, has not changed, for in each decade the average stay of each patient varied but very little from three weeks and four days.[1]

One more point is of interest. Did the aged and delicate, the complicated and the intemperate have as good a chance for recovery under the old heroic treatment as with the later sustaining one?

Counting all the cases of these classes together, which means that many are counted twice, we find before the year 1860, or during the heroic period, 62 cases among these classes, with 25 deaths, and after 1860 397 cases, with 165 deaths. Reduced to percentage, we find the mortality to be almost exactly the same, namely, 40 per cent. in the first period and 41 per cent. in the second period.

We must, however, admit that the present treatment of expectancy, a treatment which makes the patient as comfortable as possible, preserves his strength and avoids everything harsh, is certainly far more agreeable to the patient than the former heroic method.

After these studies we cannot but admire the regular and uniform manner in which pneumonia—that type of self-limited diseases—has run its course in all these years uninfluenced by the varying treatment it has received.

SUMMARY.

1. In the 1000 cases of acute lobar pneumonia treated at the Massachusetts General Hospital from 1822 to 1889, there was a mortality of 25 per cent.

2. The mortality has gradually increased from 10 per cent. in the first decade to 28 per cent. in the present decade.

3. This increase is deceptive for the following reasons, all of which were shown to be a cause of a large mortality:

(*a*) The average age of the patients has been increasing from the first to the last decade.

(*b*) The relative number of complicated and delicate cases has increased.

(*c*) The relative number of intemperate cases has increased.

(*d*) The relative number of foreigners has increased.

4. These causes are sufficient to explain the entire rise in the mortality.

5. Treatment, which was heroic before 1850, transitional between 1850 and 1860, and expectant and sustaining since 1860, has not, therefore, influenced the mortality rate.

6. Treatment has not influenced the duration of the disease or of its convalescence.

[1] The table shows the average duration of fever and stay in the hospital in each decade.

	1822 to 1829.	1830 to 1839.	1840 to 1849.	1850 to 1859.	1860 to 1869.	1870 to 1879.	1880 to 1889.
Fever (days)	10.5	8.7	9.1	9.1	8.9	9.5	9.2
Stay in hospital (weeks)	3.6	3.5	3.8	3.7	4.2	3.4	3.6

ON SOME MODIFICATIONS IN THE TECHNIQUE OF ABDOMINAL SURGERY, LIMITING THE USE OF THE LIGATURE EN MASSE.[1]

BY LEWIS A. STIMSON, M.D.,
OF NEW YORK.

THE period during which the important and brilliant operations, now so frequently and successfully performed within the abdominal cavity, have been practised is relatively very brief, and although the accumulated, and, in many instances, the individual experience is large, the work has, in the main, been done along lines and according to methods and principles which, it may be assumed, have yet to undergo modifications that will be slowly evolved from the thoughts and experience of successive generations of surgeons. In this respect abdominal surgery differs widely from the other branches of the art: it can profit, not by the experience of centuries within its own field, but by that of only a few decades of years; and as, in addition, the material conditions of this field present wide variations from those of the regions upon which the skill and thought

[1] Read before the American Surgical Association, 1889.

of surgeons have heretofore been concentrated, it is not singular that corresponding differences should appear in its operative principles and methods. Of these differences the most striking is in the measures taken to prevent or arrest hemorrhage, which consist, as a rule, of *ligatures en masse*, ligatures of heavy silk, each embracing a large mass of tissue, and thus creating one or more "stumps" from which the blood-supply has been cut off, and which, subsequently, are either fixed in the external wound to be slowly cast off, or are left in the abdominal cavity to undergo molecular disintegration and absorption.

The advantages which, in theory at least, belong to this method are celerity of performance and freedom from hemorrhage, and it is not to be denied that in many cases, and especially in those which were the first undertaken in this branch, and success in which led to the great extension that has followed —the removal of narrow pedunculated cysts of the ovary—these advantages do exist. By no other method of treatment, probably, could the cyst be removed through so small an incision, so rapidly and so safely, and it is not strange that its admirable adaptability to these cases should have led to its habitual use in others, and that the attention and ingenuity of operators should have been directed by its defects to its improvement and modification rather to the substitution of a radically different method.

The principal objections to the *ligature en masse* are two in number: (1) It is not always an efficient protection against hemorrhage, and (2) the mass of tissue embraced by it and forming the stump is sometimes so large or so related that it cannot safely be returned within the cavity and treated intra-peritoneally, but must be fixed in the parietal wound to be cast off as a slough, and thus to necessitate healing by granulation, with its delay and risks. The size of the stump is not the only reason for treating it extra-peritoneally; another and equally strong one arises from the fear of hemorrhage or from the nature of the means used to prevent it, such as the elastic ligature, the clamp, or the écraseur, which cannot be left within the peritoneal cavity. The danger of hemorrhage from a stump that is long enough to be treated extra-peritoneally is not great, for the protective means at our disposal are efficient, and, if bleeding should occur, it can be promptly detected and readily controlled. But it is vastly different with ligatures that are left within the cavity, ligatures of silk or catgut embracing, usually, a broad layer of parietal peritoneum that has been drawn in from all sides toward the ligature and is retained by it under considerable tension. Within this puckered fold of peritoneum lie the vessels and the tissue in which they are imbedded, all tense because they have been lifted up and drawn upon in the application of the ligature, and all constantly solicited by this tension to slip out of the loop. Each slight yielding to this traction makes the next one easier, for it diminishes the amount of tissue embraced within the loop, and thus diminishes also the friction by which the rest is retained. Hemorrhage from such a ligature is not uncommon, and has been fatal, and the post-mortem examination plainly shows the mechanism by which it has been made possible; there is the large circular gap in the peritoneum, the wide extravasation in the subperitoneal connective tissue, and far up within it the divided vessel, all indicating by their separation the traction necessary to bring them within the loop of a single ligature. The fault is not in the tying of the ligature; it has not become untied, but it has failed to hold, just as it would have failed if it had been placed upon a smooth, hard cone. The ligature has not simply to compress the vessels contained within it, but it has also to oppose a constantly exerted everting strain, acting toward all sides, widening its loop, and favoring the escape of the central vessels by loosening the friction upon them, and in this contest it has too often proved the weaker.

The consideration that appears to have had most to do with the general use of this dangerous form of ligature is the supposed necessity of tying all divided tissues in order that all hemorrhage may be prevented, not only that from the larger vessels, but also that from the minute vessels of the peritoneum and connective tissue. But this necessity, I think, does not exist, and this mode of ligature should be abandoned, except in certain special cases, for that which is the rule in operations upon other parts of the body, the ligature of the arteries alone with the smallest possible amount of additional tissue, and every effort should be made to exclude the peritoneum itself from the grasp of the ligature. Ordinarily, this is not difficult to accomplish. Take, for example, the outer portion of the broad ligament, where its peritoneal layers are reflected forward, backward, and outward, over the pelvis, and where the bundle of ovarian vessels lies. Draw it well up by lifting the ovary, place a rather long-bladed pair of self-holding forceps transversely upon it close to its base, divide the ligament a half inch on the distal side of the forceps along the full length of its blades; the divided vessels will be plainly seen on the cut surface, where they can be readily grasped with an artery-clamp, the peritoneum stripped back, and a ligature applied. Then, on removal of the first pair of forceps, the peritoneum retracts to its original position, the vessels lie free in their bed of connective tissue, and the ligature is subjected to no other strain than if it had been placed upon an artery in continuity; traction upon the parietal peritoneum by any shifting of the viscera or change in the attitude of the patient leaves it unaffected thereby.

This can be done wherever a clamp can be placed between the abdominal wall and the part that is to be removed, and the cases in which *ligature en masse* will be preferable appear to me to be only those in which the abdominal incision is so small or the anterior wall so thick and so slightly depressible that a clamp cannot be securely applied and the cut surface readily inspected and handled. The cut edges of the peritoneum can afterward be brought together with a continuous suture, if it is thought best to close this gap. The principle which, in my judgment, should govern the method of securing vessels divided in the removal of a viscus or a tumor from the abdominal parietes may be formulated as follows: The ligature should be applied to the vessels alone, underneath the peritoneum, and should under no circumstances include a circular layer or sleeve of parietal peritoneum that has been forcibly drawn up to form a pedicle, and will have to be held by the ligature against a diverging lateral strain.

A special and very valuable application of the substitution of isolated ligature of the vessels for the *ligature en masse* is the preliminary ligature of the uterine arteries in continuity, in supra-cervical or total abdominal hysterectomy. I have employed it with complete success in five cases, the first two of which were reported to the New York Surgical Society, January 9, 1889, and published in the *New York Medical Journal*, March 9, 1889. Each artery is sought for at the side of the upper part of the cervix by palpation of the broad ligament between the finger and thumb; after its position has been thus ascertained, a small incision is made through the peritoneum along its course on the front or, preferably, the back of the broad ligament, the artery separated from the veins with a director, and a ligature passed by means of an aneurism needle. The ureter lies to the outer side and is easily avoided. When both uterine arteries have been thus tied, and the ovarian vessels secured, as above described, by clamps, both ovaries and tubes and the body of the uterus can be removed by a transverse incision just above the clamps and ligatures, and the cut surface will be almost absolutely bloodless. The cervix can then be removed by cutting through between it and the bladder into the vagina and then cutting around it with scissors, or, of course, the cervix can be removed without previously cutting away the body of the uterus by cutting through each broad ligament to the side of the uterus, carrying the incisions through the peritoneum on the front and back of the uterus, and then working down through these latter incisions to the vagina as in the other case. The hemorrhage from this part of the operation is trifling, and as the cut surface is freely exposed to view, any vessel that may require it can be readily caught and tied. The following record of a hitherto unpublished case (my fourth) may serve to show the details.

F. W., forty-eight years old, colored, unmarried, had suffered for a number of years from abdominal pain and discomfort, and profuse hemorrhages from the womb attributed to a slowly increasing abdominal tumor situated in the hypogastrium. When I first saw her, in March, 1889, she was greatly reduced in strength and had been confined to bed for several weeks. Examination showed a solid, irregular, movable tumor filling the space between the umbilicus and pubes, and extending a hand's breadth to either side of the median line. The cervix could not be reached *per vaginam*, and the upper wall of the vagina was somewhat depressed by a firm, rounded mass, movable and apparently continuous with that lying above the pubes. The diagnosis of multiple uterine fibroids was made, and an operation for their removal was proposed and accepted. I sent the patient to the New York Hospital, and operated there March 26, 1889.

The peritoneal cavity was opened by an incision extending from a little above the pubes to the umbilicus, and through this the tumor and both ovaries were with some little difficulty turned out. By division of some broad adhesions between the rectum and the back of the uterus, Douglas's pouch and the posterior surface of the broad ligaments were freely exposed to sight and touch. The two layers of each broad ligament were found to be widely separated from each other near the uterus by the development of a fibroid low down upon the back of this organ, and each uterine artery could be felt lying much nearer the anterior than the posterior layer. The left one was first sought for through an incision in the posterior layer low down in the pelvis close beside the above-mentioned fibroid; it was found at the depth of about an inch, raised upon an aneurism needle for inspection and identification, and tied with catgut. The search for the right uterine artery was more difficult, because of its even greater distance from the posterior layer, but it was ultimately secured and tied, although not so cleanly isolated as the other had been. Up to this time twenty-five minutes had been consumed in the operation, fully ten more than in any of the preceding operations, the delay being due partly to the difficulties created by the depth at which the arteries were placed, and partly to an intercurrent exploration made to ascertain if they could be exposed and recognized with certainty close to their origin upon the anterior branch of the internal iliac artery.

The outer portion of each broad ligament was then clamped with hæmostatic forceps well below the ovary, each ligament completely divided with the knife above the clamp, the cuts united by incisions through the peritoneum covering the front and back of the uterus, and through these incisions the uterus was peeled away from the peritoneum well down to the cervix, and then its body cut away by a transverse cut. There was no bleeding from the cut surface.

The stump of the uterus was seized with Volsella forceps and drawn upward and backward, the cut

edge of the peritoneum adjoining the bladder drawn forward, and the anterior surface of the cervix rapidly dissected out until the vagina was opened into, the dissection being guided by the left fore-finger introduced through the vulva into the vagina. After the opening had been made the finger was withdrawn and reintroduced into the vagina through the opening to serve as a guide in the division of the remaining attachments of the cervix; this was quickly and easily made with scissors, taking care to cut on the sides between the ligated uterine arteries and the cervix. There was no hemorrhage requiring attention, except from two small vessels divided in the dissection of the anterior surface of the cervix.

Turning then to the cut surfaces of each broad ligament at its outer part, where held by the clamp, the bunch of divided vessels was caught with another clamp, drawn out of its peritoneal sheath, and tied with catgut. The removal had thus been made and all bleeding arrested or prevented by six catgut ligatures, two on the uterine arteries, two on the bunches of ovarian vessels, and two on small bleeding points between the bladder and vagina.

The remaining details may be briefly given. The peritoneal flaps raised from the front and back of the uterus were turned down toward the vagina so that their serous surfaces were opposed to each other, and the sides of the peritoneal gap left by division of each broad ligament were brought together by a continuous catgut suture; a rubber drainage tube was placed in the vagina so that its inner end projected about two inches into the peritoneal cavity, and the anterior incision was closed. The vagina was loosely packed with iodoform gauze. The drainage tube was removed after forty-eight hours; loose packing was kept in the vagina for a week, and this passage was occasionally cleaned with a douche. The patient made a good recovery.

The capital point to be attended to is that the uterine arteries should be tied sufficiently low down in the pelvis, before branches of any considerable size are given off, for otherwise time will be lost in securing these branches when they are subsequently divided. In case of accident, such as the slipping of the knot of the ligature, or the wounding of the artery or of a branch by the aneurism needle, or of hemorrhage from an unsecured branch, the bleeding can be easily arrested by pressure with the finger upon the corresponding internal iliac artery or its anterior branch, and an opportunity thus afforded leisurely to repair the damage or secure the wounded vessel.

The advantages of the method are apparent: rapidity and ease of execution, absolute and permanent security against hemorrhage, relief from the necessity of creating strangulated stumps with the concomitant risks of setting up suppurative or septic processes, and immediate closure of the abdominal wound. In cases in which it may be deemed desirable to retain the cervix, it can be entirely shut off from the peritoneal cavity by drawing the peritoneum together over it, and its raw surface and that of the subperitoneal space can be drained by a tube placed in the cervical canal and brought out through the vagina. If the operation is undertaken for procidentia, the cervix may be retained and fixed in the lower angle of the abdominal wound, as in one of my fibroid cases, or it may be removed and the upper cut edges of the vagina fixed in the same place, as was recently done with success by my friend and colleague Dr. William M. Polk.

Whether or not the isolated ligature of vessels upon the cut surfaces of the base of implantation of broadly pedunculated tumors of the ovary and of those formed by distention of the tubes can be advantageously substituted for the *ligature en masse* I have not yet had an opportunity to determine by trial, but I believe that it can be. Certainly the ovarian artery can be thus secured, and it does not seem probable that the branches coming from the side of the uterus will prove too large or too numerous thus to be safely and promptly secured. It is within the experience of all that a heavy silk ligature drawn with all the force that it will bear about such a pedicle does not always prevent bleeding, but that separate ligatures need in addition to be placed upon one or two spirting vessels. The trial can be easily made, and, I believe, without serious risk.

A CASE OF TUBAL PREGNANCY TERMINATING SPONTANEOUSLY PER VAGINAM.

By P. C. WILLIAMS, M.D.,
of Baltimore.

January 29, 1889, I was called to see Mrs. B., whom I had attended in 1888 for a severe vaginismus, which was greatly relieved when I left Baltimore in September, 1888. I found Mrs. B. much improved in appearance since I had seen her in September. She had gained much in strength, had an excellent color, and was able to exercise with more comfort than she had done for many months. I was surprised when she told me that she thought she was pregnant, and she desired me to ascertain whether it was true.

Upon inquiry she informed me that she had menstruated freely about the *middle of October*—had not menstruated in November or December—but during that time had decided leucorrhœal discharge which was frequently colored either *red or brown*. At the time of my visit (Jan. 29th) her strength and appetite were good, her figure plump and full, and her color excellent. There was also increased fulness of the mammary glands—but there was no "morning sickness," no nausea at any time.

External examination revealed nothing special, except enlargement of abdomen and *tenderness over the pubic region.*

Examination with speculum revealed vagina and labia of natural color, the cervix uteri normal in size, but rather *soft* to the touch; the *os uteri patulous* and emitting a free mucous discharge. Under these circumstances I felt satisfied that she was not pregnant and so expressed myself to her.

She still insisted that she was pregnant, and wished me to explain her failure to menstruate during the past two months, and her increased fulness of abdomen and breasts. This I was unable to do.

During the month of February I kept her under observation. During that time there was a gradual and steady increase of more or less bloody mucus, accompanied with pain of considerable severity, which *she* always located "in the region of the bladder."

During the latter part of February I found increased fulness and hardness over the pubic region, extending toward the left side, and I then thought that I could detect the outline of a fœtus. Further investigation proved this to be true.

After careful external examination I inserted two fingers of my left hand into the anterior "cul-de-sac," and then by steady pressure upon the abdomen with my right hand I could distinctly feel a tumor descend upon them, and I could readily produce abdominal ballottement. By cautious pressure with my hands—one in the vagina and the other on the abdomen—I could distinguish the outlines of the body and limbs of the fœtus. Being thus satisfied that she was pregnant; and also feeling convinced that the fœtus could not be *in utero*, I determined to settle that question. Accordingly I inserted a vaginal suppository about *two inches long*—which I had been using to allay the pain—into the cavity of the uterus. It entered the *os* with great facility, and this induced me to introduce my finger *in utero;* which proved beyond all doubt that the uterus contained no fœtus. This convinced me that it was a case of *extra-uterine pregnancy*.

Furthermore, the constant increase of bloody discharge from the vagina led me to suppose that I had to deal with a case of *tubal* pregnancy—with the fœtus just outside the *left horn* of the uterus. This bloody discharge continued with more or less abundance during the month of March, and about the 20th of the month the pain became more and more severe, and it required large doses of opium to restrain it within the limits of endurance.

At this juncture, viz., early in March, I communicated my opinion to Prof. Howard, and I told him that I would probably have to call upon him to relieve my patient by a laparotomy. Being anxious to save my patient the burden of thinking over the impending operation, I determined not to inform her family of her grave condition until circumstances would demand active intervention. Finding, however, that my reticence subjected me to very severe criticism from her friends outside of her family, I concluded that I ought to explain the situation to her husband.

This I did fully on the evening of March 30th. Early the next morning, April 1st, her husband came for me, and said that his wife had suffered intensely all night, and that the anodynes could not control the pain. I went with him immediately, thinking that the time for the laparotomy had come.

When I reached the house I found her suffering great agony. I at once put her under chloroform, and proceeded to examine per vaginam. I introduced my finger *in utero* and to my great surprise and unutterable relief I discovered that the *fœtus had descended into the uterus*, and that my patient *was in labor*. After three hours she expelled a fœtus about *four months old*, which gave feeble evidences of life and then expired. The placenta was extracted by gentle traction upon the cord. This was followed by slight hemorrhage, which gradually diminished under the use of ergot until it assumed the quantity and quality of ordinary lochial discharge.

For some days there remained an area of induration, about half the size of my hand, in the left iliac region. This induration gradually decreased in area, until to-day (May 10th) there is a hardness resembling a tumor about the size of an English walnut, a little to the left of the median line, and about half-way between the umbilicus and the pubis. With this exception my patient has returned to her normal condition, and I hope will soon be able to resume her household duties.

Thus has terminated favorably a case unique in my experience; and one that caused me grave anxiety for many weeks.

MEDICAL PROGRESS.

A new Symptom of Pericarditis.—In some cases the diagnosis of effusion into the pericardium is difficult; and a symptom, first noted by Bamberger, is said to be constantly present, and to aid materially in arriving at a correct conclusion. Puis, in the *Wiener medicinische Wochenschrift* (quoted in the *British Med. Journ.*, July 6, 1889), early in this year, has again attracted attention to the point. By percussion of the patient in a sitting position, or when lying on the right side, there is a muffled tympanitic resonance or diminished resonance over the left side of the thorax behind, extending downward from the angle of the scapula; and at the place of greatest loss of resonance there is distinct bronchial breathing and bronchophony, with increased vocal fremitus. If the patient is made to bend forward, a portion of the dulness completely disappears, another portion becomes tympanitic, and no bronchial breathing is heard. This change is more marked still if the patient assumes the knee-elbow position. The physical signs observed are ascribed to compression of the lower lobe of the left lung by the fluid in the pericardium, and is found chiefly in young adults with chests which are elongated or nar-

rowed antero-posteriorly. The presence of pneumonia or pleuritis is contra-indicated by the alteration of the physical signs when the position of the patient is changed.

Salve for Pityriasis Versicolor.—The following salve, which is recommended by the *Deutsche medicinische Wochenschrift*, June 6, 1889, as an efficient remedy in cases of pityriasis versicolor, should be rubbed into the affected skin every evening and washed off with soap and water the following morning:

℞.—Salicylic acid . . . 3 parts.
Precipitated sulphur . . 10 "
Vaselin } . . . āā 50 " —M.
Lanolin }

Cholecystotomy.—MR. LAWSON TAIT states that he has now performed fifty-four cholecystotomies, with two deaths, which were not in the least degree attributable to the operation, but simply to the progress of the disease; we may take it, therefore, that the true mortality of cholecystotomy is not more at present than four per cent. Of the cases operated upon so far there has been not a single case of recurrence of the disease, so that this argument which is put forward in favor of cholecystectomy has no foundation whatever. As a matter of fact, gall-stone is not a disease of the gall-bladder, for it is perfectly evident that the stones are not formed there, although it is true that there they grow; just as we know that in the great bulk of cases stone in the bladder is not a disease of the bladder originally, for the stones are in most instances formed in the kidney. Biliary fistula after cholecystotomy can only be permanent when the operation happens to have been performed at a time when a gall-stone was impacted in the common duct—at least that is his experience; and he can hardly imagine any other condition than obstruction of the common duct making this condition permanent. In three of his cases he crushed this obstructing gall-stone, and succeeded in getting a free road through the common duct. In one case he did not succeed; the patient, after living some years with a biliary fistula, died of phthisis, though he believed that the phthisis was a condition perfectly independent of the biliary fistula. On post-mortem examination there was found a series of gall-stones obstructing the common duct, only one of which he had succeeded in breaking up. It must be evident to the least skilled observer that in these cases removal of the gall-bladder would have been the most foolish of all possible proceedings, for the bile must have regurgitated immediately into the peritoneum. The cases in which the biliary fistula was alleged to remain permanently really constitute the strongest of all arguments against the operation of cholecystectomy, and of this operation he says that it is one which can be performed with greatest ease when there is no need for it—that is to say, when the gall-bladder is free from adhesions and perfectly healthy; but in those conditions where it might really be found advantageous—that is, where the gall-bladder is in a condition of chronic suppuration and greatly thickened by disease—the operation would be an absolute impossibility in the living body. Therefore, before we can judge as to its mortality, we must know not only how many cases have been performed, and what the mortality of these is, but we must know how many times it has been begun and left unfinished, and he ventures to say that the list will be found to be an immensely heavy one.—*Lancet*, June 29, 1889.

Chlorotic Dysmenorrhœa.—DR. MONIN, in the *Revue de Thér. méd.-Chir.*, June 1, 1889, advocates the following treatment in cases of chlorotic dysmenorrhœa:

℞.—Spirits of balm }
Tincture of saffron } . . āā f℥jv. —M.
Tincture of iodine }

Sig. Twelve drops after each meal, to be continued for two months. Every week a hot bath should be given, to which should be added about four and one-half ounces of chloride of ammonium.

The Heredity of Myopia.—If the opinions of various ophthalmologists concerning the heredity of myopia were recorded here, the result would be an accumulation of vastly conflicting statements. This, however, would be largely due to lack of precision in investigating the subject. Lately DR. MOTAIS, in *L'Abeille Médicale* of June 17th, has carefully studied both the history and course of disease in 330 cases of myopia occurring in young people, and has arrived at the following conclusions:

1. The hereditary influence of myopia is manifest.

2. Out of 330 cases the families of 219 were afflicted with the same disease. This shows a percentage of 65 per cent.

3. Hereditary myopia is distinguished from acquired myopia by

a. Its more early appearance.

b. Its more rapid development.

c. Its greater severity.

d. Its being more frequently followed by other completions.

In short, hereditary myopia is far more serious than the acquired form of the disease.

4. Myopia is usually transmitted from the father to the daughter (86 per cent.) and from the mother to the son (79 per cent.).

5. The principal conditions which favor the transmission of hereditary myopia are:

a. Use of the eyesight under bad hygienic surroundings, whether in school or at home.

b. Astigmatism, 14 per cent.

c. Microsæmia (diminution of the orbital arch), 16 per cent.

6. The increase of the disease in hereditary cases was, in 6 per cent. of the cases, found to be mainly the fault of those who had charge of the child's education. If care is not taken, acquired myopia will not restrict itself to the individual but may also be transmitted unto their children.

Suprapubic Lithotomy in Young Children.—DR. ALFRED LENDON, Lecturer on Forensic Medicine, University of Adelaide, has operated for vesical calculus in male children under five years of age, three times within twelve months, and with complete success. In each case the rectum was distended with the bulb of a spray-producer as a substitute for Petersen's bag, and the bladder washed out and then distended with boracic acid lotion. The skin-incision in no case exceeded one inch and a half. The bladder was not sutured; the skin wound was

brought together with horsehair, and a drainage-tube inserted which projected into the bladder. The first patient was four years of age; the calculus weighed fifty-eight grains; urine passed through the urethra on the eleventh day, and ceased to pass through the wound on the thirteenth. The second patient was not quite two years old; the stone weighed one hundred grains; urine passed naturally at the end of the first week, ceasing next day to pass through the wound. In the third case the patient was three and a half years old; the calculus weighed forty-five grains; the urine passed through the urethra on the seventh day, and ceased to pass through the wound on the nineteenth. The drainage-tube was removed on the day of the operation in the second and youngest case, on the second day in the first, and on the third day in the third case. Dr. Lendon, who writes his experience in the *Australasian Medical Gazette*, states that, had the proper instruments been available, he would have performed litholapaxy in preference to lithotomy. For a surgeon who had no special experience of vesical surgery, suprapubic appeared in many respects preferable to perineal lithotomy. In Dr. Lendon's case the chief difficulty was the extraction of the stone after the opening of the bladder.—*The British Med. Journal*, July 6, 1889.

Chapped Hands.—The *Revue de Thèr. méd.-Chir.*, June 1, 1889, gives the following salve, which, it says, is a most valuable toilet article. It keeps the hands white and smooth, and quickly remedies all redness and roughness of the skin:

Lanolin.	℥iijss
Liquid paraffin	℥ijss.
Vaniline	grs. ij.
Attar of roses	gt. j.—M.

The salve should be applied morning and evening.

Inoculation of Tuberculosis through Vaccination.—DR. E. PIPER, in the *Centralbl. für klin. Med.*, June 8, 1889, states that the danger of being inoculated with tuberculosis through vaccination is very slight. As far as human lymph is concerned, practitioners universally abstain from using that of tuberculous, scrofulous, or rachitical subjects. Again, the danger incurred from using vaccine taken from tuberculous animals is very slight, as the virus is usually obtained from very young animals, in which the disease seldom, if ever, occurs.

Dr. Piper, after vaccinating thirty-eight consumptives, subjected the lymph obtained from them to a most careful examination, but failed to find any tubercle bacilli. He further asserts that even in case the bacilli were inoculated during vaccination, that the disease would merely be a local one, and in substantiation of this theory mentions the local tubercles which are frequently found on the hands of those having dissected tuberculous subjects.

Injections of Lemon-juice in Severe Epistaxis.—The *Centralb. für klin. Med.* of June 15th, says that DR. FAUCHON, of Orléans, France, obtained immediate relief in a severe case of epistaxis by the injection of the juice of a freshly squeezed lemon. So far he has only had the one occasion to use the remedy.

A Formula for Aphthous Stomatitis.—

℞.—Salicylate of soda . . .	20 parts.
Distilled water . . .	100 "

Dissolve.

In cases of aphthous stomatitis the inflamed parts should be painted with the above solution five or six times during the day, particularly after meals. The mouth should previously be well rinsed out with tepid water.—*L'Union Médicale*, June 15, 1889.

Differences of Temperature of the Two Sides of the Body a Symptom of Cerebral Lesions.—At the meeting of the Neurological Society of London, which was held May 10th, PROFESSOR HORSLEY read a paper on clinical observations during the past seven years on the value of differences observed in the temperature of the two sides of the body as symptomatic of cerebral lesions. The lecturer desired to draw attention to the practical importance of the subject. He stated that an analysis of eighteen cases observed by him had proved that notable asymmetry of the two sides of the body occurred when a lesion was situated in what he wished temporarily to call the corpus striatum frontal plane of the hemisphere, this on the surface of the cortex passing through the ascending frontal gyrus. Further, that, as a rule, the converse also was true—namely, the occurrence of a lesion in other parts of the hemisphere was not accompanied by change in the temperature of the opposite side of the body. When, as in the former condition, change did occur, it was, with very rare exceptions, evidenced by a rise of temperature of the opposite side of the body. The solution of the problem could only be determined by experiment, and, until that was done, he deprecated the use of such expressions as "heat centres," etc., the existence of the difference, although a very valuable fact, being only so far ascertained. The discussion was continued by Dr. Hughlings Jackson, Dr. Bastian, Professor Schäfer, Dr. Beevor, and Dr. Mickle. There was a general agreement on the facts of the case, and their practical and scientific importance; but it was felt that much clinical and experimental work must yet be done before certainty of interpretation could be reached.—*British Medical Journal*, June 22, 1889.

Pylorectomy.—We learn from the *British Medical Journal* of July 6th, that on June 26th SIR WILLIAM STOKES performed the operation of pylorectomy in the Meath Hospital on a female patient, aged forty-eight, suffering from cancer of the pylorus. This is said to be the third case in which this formidable procedure has been adopted in the United Kingdom, Mr. Southam's and Mr. McArdle's cases having been the first and second. The operation, in Sir William Stokes's case, lasted over two hours. The patient subsequently rallied fairly well, and continued to progress satisfactorily up to 9.30 P. M. We regret to learn that she then became alarmingly weak, and notwithstanding the efforts that were made to revive her, the weakness continued to increase, and at 11 P. M. she became collapsed, and died at 11.35 P. M., just twelve hours after the operation. The statistics of the operation so far are not encouraging, for of seventeen cases operated on for pyloric disease, there are said to have been only four recoveries.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, JULY 27, 1889.

THE MORTALITY OF PNEUMONIA.

WHETHER the mortality of acute pneumonia has changed during the past decades is a question of some importance, and since the appearance of Dr. Hartshorne's paper last year (THE MEDICAL NEWS, April 7, 1888, p. 373), in which he claimed that there was very striking increase, due in part, at least, to change of treatment, a widespread interest has been aroused in the matter. Statistics have been published which could be handled so as to favor either side, and it became evident that we needed a thorough and careful sifting of the figures of one of our large institutions with records available for the past fifty or sixty years. This want has been supplied by the admirable paper of DRS. TOWNSEND and COOLIDGE, in our present issue, who have analyzed with a scrupulous care and painstaking labor in the highest degree creditable, the thousand cases which have been treated at the Massachusetts General Hospital from 1822 until the present day.

The first evident fact in their tables is that a proportionally larger number of cases of pneumonia have been admitted during the last decades, the result doubtless of an increase in the class of citizens which looks to charity for relief in time of sickness.

As to the mortality itself, there has been an almost unbroken rise from 10 per cent. in the 1820 decade to 28 per cent. in the present one, and should the authors' labors have ceased here, their figures would have told heavily in favor of the great increase of the death-rate. There are, however, important modifying influences which must be considered. In Chart IV. the important influence of age upon the mortality is shown, a rapid increase occurring after the thirtieth year. The records show that a proportionately greater number of patients over fifty have been admitted in the later decades, the average age having increased from twenty-five and a half years in the twenties to thirty-four and a half in the eighties. A study of the complications, and of the previous condition of the patient, whether delicate, or whether addicted to alcohol, is given in Chart VI., which indicates that the ratio of such cases has greatly increased, rising from about 10 per cent. in the thirties to over 25 in the sixties. The race factor as an influence has become extremely important, particularly in our large city hospitals, in which the Italians and Huns are now so common. Among the native Americans the percentage of all the fatal cases is lower than in the Irish or other foreigners, and excluding the complicated cases, the percentage is still more striking: Americans, 9 per cent.; Irish, 11 per cent.; and other foreigners, 14 per cent. In the earlier decades the relative proportion of American patients was very much greater, as shown in Chart VII.

In short, the accurate sifting of the figures, and a study of the history of individual cases, bring out clearly that three important factors have influenced the mortality, viz.: a steady increase of the average age; an increase in the number of intemperate and of delicate patients, and of the complicated cases; and a great increase in the proportion of the foreign-born. Chart X., which represents the mortality in decades, excluding all cases which died over fifty years of age, or which were intemperate or delicate, or with serious complications, shows extremely little variation throughout the entire period of seventy years, and the authors conclude that at the Massachusetts General Hospital the mortality of acute lobar pneumonia has remained practically the same from 1822 to 1889.

An interesting analysis is also given of the change in treatment. Chart XI., showing the period of treatment in the heroic, transitional, and expectant stages, would seem to indicate that this rise of mortality in the total number of cases took place during the period prior to 1860.

It is interesting to note that the stay in hospital has varied very little in the different decades from a period of three weeks and four days.

The authors are to be congratulated upon this excellent piece of work, which will be duly appreciated by the profession, all the more as it comes from the "Massachusetts General," the hospital of Jacob Bigelow and of Jackson, of Channing and of Ware, of Shattuck (Sr.) and of H. I. Bowditch—men who have adorned our calling, and whose patient labor in the past made the present contribution possible.

THE SANITARY ADMINISTRATION OF DAIRY FARMS.

MILK inspection, as usually practised, has for its object the detection, by chemical analysis, of impurity and adulteration, and is, therefore, of great economic and hygienic advantage. The tests are made of samples procured at various points of distribution, but the investigation rarely extends to the source of the supply. By thus limiting the inquiry to the condition of the supply as furnished for distribution, a not uncommon and most important source of contamination is left entirely unguarded, and may not even be suspected until an outbreak of disease leads to an investigation of its cause.

The evidence is not wanting to show that cows' milk may serve as the disseminator of infectious disease among human beings. Typhoid fever, scarlatina, and diphtheria have all been disseminated in this way. It is now generally admitted that tuberculosis may be conveyed through the medium of cows' milk. Unfortunately, chemical analysis is of no avail in detecting the subtle infections which communicate these disorders, and hence the tests usually applied afford no protection against a possible source of virulent disease. There is evidently pressing need of enlarging the scope of inspection by making it include a rigid inquiry into the sanitary administration of the dairy farms themselves. *The Practitioner* for January, 1889, contains an article on the last-mentioned subject by DR. SHIRLEY F. MURPHY, which exposes the deficiencies of the ordinary methods of inspection, and shows how they may be remedied.

The health of the cow in its relations to the health of the drinkers of her milk, and the protection of milk from unhealthy surroundings and against infection or contamination, are subjects which have received more consideration in England than in this country. The English Contagious Diseases (Animals) Act of 1878 gave to the Privy Council power to issue general or special orders for the registration by the local authority of all persons carrying on the trade of cowkeepers, dairymen, or purveyors of milk, for the inspection of cattle in dairies, for prescribing and regulating the lighting, ventilation, cleansing, drainage, and water-supply of dairies and cowsheds, for securing the cleanliness of milk-stores and milk-shops, and of milk vessels used for containing milk for sale; and, lastly, for prescribing precautions to be taken for protecting milk against infection or contamination. This Act was further supplemented by the Acts of 1885 and 1886, which extended the authority already conferred. The legislation is, however, faulty in an important particular, inasmuch as it takes no cognizance of the circumstances under which the cow is placed in the meadows. It is very essential to the health and good condition of the cow and of those who drink her milk, that the drinking-water should be free from excremental and other pollutions. This fact seems to have been entirely lost sight of.

With its defects, however, the English law is far superior to any legislation that we in this country have upon this subject. In fact, sanitary legislation applicable to the cow in her shed and to all the circumstances of her life, her individual cleanliness and health, and the diseases which are known to have an effect upon her milk, is only beginning to attract attention. The sanitary regulation and the improvement in the condition of dairy farms have been due to the desire of dairymen to meet the requirements of modern knowledge rather than to the necessity of complying with statutory obligations. Injury to business incident to outbreaks of disease through the sale of impure milk has also been an incentive to vendors of milk to insist upon the regulation of dairy farms in a manner to prevent such calamities.

Milk being so universal a beverage, and the facility with which it may be the carrier of infection, imparted to it mainly at the farm, being recognized, the systematic inspection of dairy farms under adequate regulations is imperatively demanded in the interests of the public health. These regulations should be broad in their application, and made uniform for an entire State. It is commonly the case that milk produced in one county is distributed entirely beyond its limits, and hence local laws may be inoperative against the source of the evil.

Milk infection may be the effect of human agency; at least, it is safe to adopt this theory until disproved. It is also believed that the cow herself can suffer from some malady which may give rise to it. The

precautions prescribed by the law should be taken for the exclusion of both possibilities. The health of the cow should be maintained by the strictest attention to her hygienic surroundings. Pure water for the cow to drink, and for washing the pails and cans, is most essential. The cleanliness, ventilation, and drainage of the sheds are also matters of great importance. The milk should be guarded against contamination in handling and in storage. Persons suffering from dangerous infectious diseases should be prohibited from milking cows, handling milk vessels, and from taking any part in the business. Cases of infectious diseases arising in a herd should be isolated at once. The habit in Denmark of washing the hands after the milking of every two cows, is a useful precaution against the communication of dangerous udder disease. Udder disease undoubtedly impairs the wholesome quality of the milk. Infantile diarrhœa has not infrequently been traced to this disorder. When tuberculosis affects the udder, there is danger of transmitting the disease to the consumers of the milk. The prevalence of tuberculosis in cattle whose flesh is used for food, and the proof of the infectiousness of the milk of tuberculous cows, furnish sufficient reason for rigid inspection and for precautions, not only in the use of the milk, but also of the flesh of animals thus diseased.

The quarantining of infected animals and the withholding of their milk from the market, should also include the prohibition of the removal of any animal of such a herd, as a means of restricting the spread of the disease. Regulations for the sanitary administration of dairy farms are for the benefit of the dairyman as well as the consumer of milk. If judiciously administered they need not work any injury, for, as Dr. Murphy remarks, "they are to be used more for the purposes of education than for prosecutions, and the latter is reserved for cases of flagrant disobedience." In the absence of such regulations there is no certain knowledge of the quality of the milk distributed, and the supply must therefore be regarded with suspicion. The consumer, however, can protect himself by boiling the milk, a plan which is now generally recommended, and which should be adopted when there is real danger of infection, and, in fact, whenever there is no definite knowledge of the source and quality of the milk.

As will be seen by a notice in our News Item column the annual meeting of the State Medical Society of Pennsylvania has been further postponed until June of next year. In view of the decided indications of the improbability of being able to obtain a successful meeting in September, and of other concomitant reasons, the Committee of Arrangements has acted wisely in assuming the authority and deferring the meeting until next year.

THE profession of Chicago will not long be without a great medical library. A nucleus of three thousand volumes has been secured by the purchase of the collection of the late Dr. J. S. Jewell; a few medical men uniting, on very short notice, to save it from dispersion under the auctioneer's hammer. The *Journal of the American Medical Association* intimates that a temporary lodgement of this choice collection will be found with the Chicago Public Library until a suitable centrally located building can be procured.

DR. JOHN B. ROBERTS has been elected Professor of Surgery in the Woman's Medical College of Philadelphia, to succeed Dr. W. W. Keen, resigned.

DR. CHARLES B. NANCREDE, of Philadelphia, has just been elected Professor of Surgery in the University of Michigan, Ann Arbor.

DR. JOHN A. CONNER, who was graduated at the University of Pennsylvania, Class of 1867, and who is the Medical Officer of the United States Commission to the International Exhibition in Paris, has been authorized by the French Government to practise his profession in France with his American diploma, not having passed his French medical examination. He is the third American who has been officially allowed to practise medicine in France without a French diploma, Dr. Marion Sims, of New York, having been the first one.

THE *Breslauer ärztliche Zeitschrift* came to an untimely end on June 29th, it having been found impossible to secure the services of an editor of a "commanding personality" to supply the place of the late Professor Gscheidlen, who founded the journal and gave to it the high position it held in German medical literature during the ten years of its existence.

THE School of Medicine in Mexico comprises eighteen professors, and the curriculum lasts five years. Most of the text-books in use are translations of French standard works.

SOCIETY PROCEEDINGS.

AMERICAN OTOLOGICAL SOCIETY.

Twenty-second Annual Meeting, held at New London, Conn., July 16, 1889.

The Society was called to order by THE PRESIDENT, DR. J. S. PROUT, of Brooklyn.

DR. B. ALEXANDER RANDALL, of Philadelphia, read a paper on

INFLAMMATION OF THE TYMPANIC ATTIC AND PERFORATION IN SHRAPNELL'S MEMBRANE.

He reported twenty cases, fifteen of which had been seen in the past six months, and urged that the condition was not a rarity. It often coexists with one or more perforations of the other parts of the drum-head. If sought and recognized early, it is a less tedious and serious matter than these attic inflammations are generally considered to be. He cited some 120 cases reported by several observers among 10,000 patients, and while he had seen a still larger proportion, accepted this as the average. Passing over the treatment as having been already thoroughly discussed, he turned to the question of causation, and cited the views of Walb that infection from without through the "foramen Rivinii" was the starting-point. Contesting the view that any colotomatous opening in the flaccid membrane was wholly negatived by modern embryologists, he urged that the individual variations in the septa in the attic predisposed some cases to localized inflammations and led to perforation at this point; and that these cases, neglected or recurrent, formed the group from which the usual obstinate cases were derived. He, therefore, advocated scrupulous search in all cases for disease in this locality as promising to nip in the bud what might later become a disease notoriously difficult to control.

DR. S. O. RICHEY, of Washington, did not think that perforations of Shrapnell's membrane are so common as had been stated. His experience with the absence of perforation corresponds with that of others. He had had cases in which perforations in other parts of the drum healed, but the perforation in Shrapnell's membrane persisted. In treating these cases, besides using measures through the external auditory meatus, he had employed injections through the catheter consisting of nitrate of silver, 1 part; boric acid, 10 parts; glycerine, 20 parts; and water, 500 parts.

DR. GORHAM BACON, of New York, had not observed this condition so frequently as Dr. Randall. It is often difficult to see these perforations. In treating he had generally used Blake's extra-tympanic syringe. By persistent syringing and the use of astringents, cicatrization is often produced. These cases are, however, very tedious.

DR. J. A. ANDREWS, of New York, said that in treating these cases in which there is purulent inflammation of the attic with a large hole in Shrapnell's membrane, after injecting the cavity, he sucked out the fluid by means of an instrument consisting of a delicate metal tube with a curved extremity, to which is attached a rubber tube. He used a boric acid solution. After sucking out the fluid, he dried the cavity with cotton wrapped on a probe, and then blew in a fine cloud of boric acid.

DR. HERMAN KNAPP, of New York, said that there is a capital difference between perforations in the upper and those in the lower part of the drum membrane. Those in the lower part may close in a few days, while in the upper part they may continue for months or years. He thought this is due to difference in anatomical structure. The lower portion is a specific tissue with little association with periosteum, while the upper part is a duplicature of periosteum and skin. When the latter part is affected, the process extends to the periosteum leading to caries and necrosis of the bone.

DR. F. M. WILSON, of Bridgeport, Conn., reported

THREE DEATHS FOLLOWING SUPPURATIVE OTITIS, WITH TWO AUTOPSIES.

Cases in which death follows a first attack are so rare that it was thought of value to report these cases. The first patient was aged forty years, and for two weeks before coming under observation, had had pain in both ears. February 27, 1888, the pain in the left ear became very intense. March 1st, he became partially unconscious, and remained so with occasional convulsive movement until March 6th, when he died. The mastoid was drilled half an inch but no pus found. No autopsy was made.

The second case, a male, aged twenty-three years, was attacked with subacute otitis March 11th. Symptom of meningitis appeared with high temperature, and he died March 27th. At the autopsy one-third of the base of the cerebrum was involved in the purulent process, which extended up under the frontal convolutions. There was about half an ounce of turbid fluid between the dura mater and inner meninges. There was pus in the labyrinth and in the tympanic cavity.

The third case was that of a boy, aged ten years, who was attacked with suppurative otitis September 5th, and died about ten days later. At the autopsy the meninges were found normal, but an abscess containing two drachms of fluid was found in the cerebellum.

DR. WILSON also presented a mastoid drill provided with a guard which could be set at any desired point regulating the distance to which the drill entered. The edges of the drill are sharp, so that the opening can be enlarged horizontally to any desired extent.

DR. GORHAM BACON thought that in these cases, where we do not find any collection of pus in the mastoid cells, we are justified in investigating the condition of the brain.

DR. J. O. TANSLEY had had several of these cases, and has, without success, sought for some means by which we could differentiate between those in which there was meningitis and those in which there was abscess. In one case, Dr. Seguin made a diagnosis of abscess based upon conjugate deviation of the eyes. Subsequent autopsy showed the correctness of this diagnosis. In another case, the speaker suspected abscess, Dr. Weir opened the mastoid, but found no pus. He also exposed the cerebrum, and, two days later, the cerebellum, but found no pus. The patient died of suppurative meningitis.

DR. S. D. RISLEY showed that in the differential diagnosis attention to the temperature, in connection with symptoms of pressure, is of great importance. In meningitis the temperature from the outset will be higher than in abscess, and the symptoms of pressure come on later.

DR. J. A. ANDREWS, of New York, said that in the past year he had made a number of autopsies in cases of brain abscess. Brain abscess may continue for a considerable time without any very positive symptoms, but where there is meningitis or phlebitis, especially phlebitis, there is usually a sudden rise of temperature with chills.

DR. OREN D. POMEROY, of New York, related a case of brain abscess secondary to tympanic disease, in which the only marked symptom was a sudden rise of temperature, sometimes going up in half an hour from normal to 107°. Intelligence was unaffected until the last, the man gradually improved, but died suddenly. The autopsy showed a large abscess of the brain covering the petrous portion of the temporal bone.

DR. ARTHUR MATTHEWSON, of Brooklyn, said that it is often difficult to make a diagnosis between abscess and meningitis, and, in fact, many are mixed cases. In meningitis the pain is more marked than in abscess. In meningitis there is more likely to be optic neuritis, while in brain abscess he had noted a peculiar dark appearance about the retinal veins.

DR. SAMUEL THEOBALD, of Baltimore, thought that the treatment of the preliminary stage of these cases is important, and that a great deal might be done to prevent the occurrence of the conditions referred to. He had found benefit from local applications, especially atropine and cocaine, and morphine and cocaine. If the bowels were constipated, he should use a calomel cathartic. If there should be symptoms of cerebral implication, he should administer mercury in some form to secure its constitutional effect.

DR. E. FRIDENBERG, of New York, said that during the past eighteen months he had made autopsies on two patients who died from cerebral abscess. In one case suppuration had lasted a year, but there had been no symptoms until a week before death, except irritability of temper; there was some odor, but very slight discharge from the ear. A week before death the patient developed pain in the ear, slight tenderness over the mastoid, followed by fever and symptoms of brain pressure. A small abscess was found in the temporo-sphenoidal lobe. The roof of the tympanum was carious, and the meninges strongly adherent. In the second case the patient had had suppuration for years. Two months before death headache occurred, which was relieved by treatment. It recurred with fever; there was some pain on pressure over the mastoid process. The symptoms again disappeared under treatment. Three weeks later he returned with similar symptoms. The next morning vomiting occurred, and that evening he died. An abscess containing two ounces of pus was found in the temporo-sphenoidal lobe.

DR. T. Y. SUTPHEN, of Newark, thought that these cases of brain trouble almost invariably follow the arrest of the flow of pus. We should look upon them as instances of local trouble, and should treat the middle ear by fomentations, and, perhaps, by poultices to bring about free discharge of pus.

DR. R. A. REEVE, of Toronto, stated that in one case of death following acute suppurative otitis, there was the most profuse purulent discharge that he had ever seen, and it continued from beginning to end.

DR. B. ALEXANDER RANDALL referred to a case of cerebral abscess which occurred in his practice last year in a boy the subject of scrofulous disease of the elbow and other joints. He found both ears discharging, with caries of the auditory meatus on both sides. On the left all the mastoid tissues were involved. Under treatment the right side rapidly improved, and on the left side there was also improvement. The case was then transferred to his surgical colleague. Six weeks later the ears were still in good condition, but the patient was gradually failing from the constitutional trouble. An hour before death there was suddenly a discharge of at least two ounces of fetid pus from the ear. There was no meningitis, but a large abscess cavity was found in the sphenotemporal lobe, one-half inch from the tympanum, and connected with it by a sinus.

In cases where it is thought justifiable to perform exploratory trephining of the brain, an admirable and safe point is one and one-fourth inches behind, and an equal distance above the upper posterior margin of the osseous meatus. This avoids the major bloodvessels, and it would be possible to reach the cerebellum through it.

DR. E. E. HOLT, of Portland, Me., reported a case of

COMPLETE CLOSURE OF BOTH EXTERNAL AUDITORY CANALS BY BONE IN A PATIENT HAVING GOOD HEARING POWER, WITH A PREVIOUS HISTORY OF CHRONIC SUPPURATIVE OTITIS MEDIA.

T. M., aged eighteen years, was seen in April, 1889, for an affection of the eye. It was incidentally learned that he had had abscesses in both ears when seven years old, and the ears discharged more or less for six years, but stopped entirely five years since. Examination showed the canals of both ears of about half the usual length and occupied by a continuation of the skin of the meatus with no appearance of the membrana tympani. There was complete closure of the canal by what appeared to be bone by all the tests employed. The hearing power for the voice was good. The stop-watch was heard only when close to the ear; the tuning-fork was heard about ninety seconds both by bone and aërial conduction. König's rod of thirty thousand vibrations per second was heard by both ears. He heard less distinctly when both ears were closed by pressure on each tragus. Shutting the mouth and closing the nostrils did not seem to effect the hearing power much, if at all. Cases with closure of one meatus with the skin of the canal continuous over the obstruction have been observed, but the hearing power is very defective. Cases in which there is a small opening between the exostosis and the walls of the meatus are not uncommon.

DR. S. THEOBALD said that four or five years ago he reported a very similar case. The newly formed membrane was, however, nearer the orifice. The hearing power was good.

DR. HOLT also stated a case of

OTIIS MEDIA CATARRHALIS ACUTA,

accompanied with facial paralysis and impairment of accommodation of the eye of the affected side.

Judging from statistics, one would be led to believe that paralysis of the facial nerve in connection with acute catarrhal inflammation of the middle ear was not a common complication. In many cases the pain having been slight, and having passed off, and the paralysis having come on, the patient's attention is directed to this and he seeks advice for the latter affection, and the cause of the paralysis is recorded "a cold" or "rheumatic."

F. L., æt. twenty-four, seen May 19, 1889. Seven days before took cold, and right ear began to pain that night. This pain continued three days, when it subsided, and on the fourth day he was unable to use his lips properly. Examination showed all the characteristics of facial paralysis. Testing the eyes, there was found paralysis of accommodation of the right eye. This he knew to be a fact because he had previously had the patient under his care and recorded the test of his eyes; and also by the fact that since the improvement of the paralysis of the face the paralysis of accommodation had disappeared.

DR. S. O. RICHEY then read a paper on

THE PHYSIOLOGY OF THE INTRA-TYMPANIC MUSCLES,

which was the elaboration of a suggestion made by him at the Congress of American Physicians and Surgeons, in 1888.

EVENING SESSION.

DR. GORHAM BACON read a paper on

CYSTS OF THE AURICLE.

Of late a number of cases of so-called cysts of the auricle have been reported. Not one of them, however, seems to represent a genuine cystic tumor such as is found in other parts of the body. They all were situated on the anterior surface of the pinna and were of rapid development. They either were the results of traumatism and contained a sanguinolent fluid, or they developed without known cause. Mild inflammatory symptoms were present in all. The development within two or three weeks in almost all cases distinguishes them clearly from the slow and absolutely non-inflammatory development of true cystic tumors. All got well either by spontaneous absorption or by incision. He had seen at least half a dozen of these cyst-like sub-perichondrial swelling of the auricle. He considered them to be mild cases of perichondritis for these mild cases of circumscribed perichondritis may, instead of getting well, remain in this condition for a time and then develop into the full picture of a diffuse perichondritis. He reported such a case.

DR. KNOPP also described a case of genuine cyst of the auricle occurring in a girl nineteen years of age. The growth was double the size of a large filbert, distinctly cystic and had developed without known cause and without any inflammatory symptoms. The cyst was removed by operation, without rupture and was exhibited. These tumors are not frequent in the auricle, but they cannot be so rare as we might infer from otological literature.

DR. WILLIAM H. CARMALT, of New Haven, reported a case of

EPITHELIOMA OF THE MIDDLE EAR.

The patient a robust man, aged forty-seven years, was first seen in June, 1888, on account of a suppurating ear (left) which had existed forty-two years and had followed measles. The ear had given him no inconvenience with the exception of the discharge until a few weeks before he came under observation. He then began to have pain in and around the ear and the discharge was exceedingly offensive. The canal was blocked by a ragged but firm excrescence, very sensitive to touch. There was slight tenderness, but no swelling or pitting over the mastoid. The pain radiated through the side of the head and interfered with sleeping. At the second visit, the left side of the face was completely paralyzed. The case was regarded as one of epithelioma of the skin of the canal. The patient was seen by another gentleman, who thought the trouble might be a carious antrum. An attempt was, therefore, made to open the antrum, but the bone around it was so sclerosed that the cavity was practically obliterated. There was nothing of the nature of an abscess in the mastoid. The incision was then prolonged through the soft parts and into the external auditory canal. A mass of soft tissue was removed which proved to be carcinomatous and a drainage tube inserted. In the course of a few weeks the ear again became blocked up and the skin became involved. With the object of alleviating some of the distressing accompaniments of the condition, another attempt was made to clear it out. By chiselling away the bone posteriorly, free access to the ear cavity was obtained and the bone scraped apparently clean. No auditory apparatus was seen, simply a mass of carcinomatous tissue. The cavity was washed with a solution of resorcin and for a time the wound did well, but subsequently the disease reappeared. The discharge again became offensive and the patient exhausted and he finally bled to death without the condition being detected, probably from erosion of the lateral sinus. No autopsy was permitted.

EXECUTIVE SESSION.

THE ELECTION OF OFFICERS

for the ensuing year resulted as follows:

President.—Dr. Oren D. Pomeroy, of New York.

Vice-President.—Dr. Gorham Bacon, of New York.

Secretary and Treasurer.—Dr. J. J. B. Vermoyne, of New Bedford, Mass.

Members of Executive Committee of Congress of American Physicians and Surgeons.—Dr. W. H. Carmalt, of New Haven; alternate, Dr. F. B. Loring, Washington, D. C.

A committee consisting of Drs. S. C. Ayres and William W. Seely, was appointed to prepare a minute on the death of Honorary Member Dr. E. Williams, of Cincinnati.

The Society then adjourned.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-fifth Annual Meeting, held at New London, Conn., July 17 and 18, 1889.

WEDNESDAY, JULY 17TH.—MORNING SESSION.

The Society was called to order by the President, WILLIAM F. NORRIS, M.D., of Philadelphia.

DR. CHARLES S. BULL, of New York, presented

AN ANALYSIS OF NINETY CASES OF SIMPLE CHRONIC GLAUCOMA, WITH SPECIAL REFERENCE TO THE EFFECTS OF IRIDECTOMY UPON THE ACUITY OF VISION AND THE VISUAL FIELD,

and the following conclusions were formulated:

In endeavoring to draw some rational conclusions from the study of ninety cases, it seems wise to begin with a quotation from Priestley Smith, to whom ophthal-

mologists owe so much of their knowledge of the pathogeny and pathology of glaucoma.

1. In considering the expediency of an operation in chronic glaucoma, he says: "In every case of chronic glaucoma the responsibility of advising an operation is a heavy one, and should on no account be undertaken without a full explanation to the patient or his friends of the almost positive certainty of blindness on the one hand, and of the uncertainties which beset the operation on the other. Having regard to the age of the patient, the impossibility of great benefit and the possibility of a painful and accelerated progress, the prudent surgeon will only operate on the express desire of the patient to secure the only possible chance of benefit, however small it may be." Armed with the preceding precaution, it seems to be our duty to operate in cases of chronic progressive glaucoma, and the earlier the better.

2. If the disease in a given case seems to be stationary and is still in the primary stage, and if it be possible to test the vision and the visual field at short intevals, delay in operating is permissible; but a weak solution of eserine or pilocarpine should be used daily, merely as an aid in controlling the course of the disease. The examination of these patients should be at short intervals and should invariably include tests for visual acuity and the careful examination of the visual field.

3. If the disease exists in both eyes but with useful vision in both eyes, the eye in which the disease is the more advanced should be operated on without delay; and the surgeon will be guided in his treatment of the fellow eye by the result of the operation on the first eye.

4. To insure the best result, the incision should be made well in the sclerotic with a narrow cataract knife or a broad lance knife, and the entire iris, from one end of the incision to the other, should be carefully torn or excised from its insertion.

5. The most carefully performed iridectomy by skilful hands is sometimes followed by rapid loss of what sight still remains; sometimes partial, but, unfortunately sometimes total.

6. A successful result is in the majority of cases more likely to follow the operation if it is performed early in the course of the disease, but the maintenance of the existing degree of vision even in these cases is not invariable.

7. As regards the question of symmetry, it is probable that in the large majority of cases, probably as much as eighty per cent., the disease is sooner or later present in both eyes, and a careful study of the cases seems to establish the fact that there can be no specific interval of time which insures the second eye against an attack.

8. If the patient is old and feeble and one eye is still free from disease for a year or more after the other eye has become affected, it may be considered prudent to avoid an operation on the affected eye; as it is probable that the unaffected eye may remain free during the remainder of the patient's life.

9. The condition of the field of vision is no constant guide either in forming a prognosis as to the progress of the disease or in deciding as to the time of operation.

10. The acuity of vision bears no constant relation to either the success or failure of the operation.

11. The anterior chamber is usually shallow, is occasionally entirely absent, but is often apparently normal in depth. The condition of the chamber gives no reliable hint as to the state of the vision or of the visual field nor any indication as to prognosis.

12. The appearance and motility of the iris appear to have some bearing upon the prognosis, though perhaps not to the extent believed by Nettleship. The latter states that in the cases in which the iris reacts rapidly to eserine the operation proves successful. This has not always been the experience of the reporter, but in the majority of the cases in which eserine caused rapid contraction of the pupil, the visual acuity was fairly good and the field was not seriously limited.

13. The depth of the excavation in, and the color of, the optic disk seem to have no close connection with the defective vision or with the limitation of the visual field, nor did they offer any constant guide as to prognosis or to the effect of an operation upon the progress of the disease.

14. The condition of the intra-ocular tension is a very uncertain guide in deciding the time for operating. It may be normal or increased or even diminished. It does not even seem to bear any constant relation to the degree of visual acuity or to the state of the visual field. The steady maintenance of the increased tension, however, without any diminution, almost invariably indicates the necessity for an immediate operation, and this necessity is especially indicated if the tension is continually on the increase.

15. The health and age of the patient exert a decided influence upon the effect of the operation. Any marked evidence of senility is distinctly unfavorable to operation.

DR. H. KNAPP, of New York, said that during the past nineteen years he had operated on 670 cases of glaucoma, 226 of which were cases of chronic glaucoma. He thought that the prognosis may be a little more favorable than had been indicated by Dr. Bull. He had had four cases in which malignant disease followed operation for chronic glaucoma. He did not agree with the author as to the advisability of the continued use of pilocarpine or eserine in those chronic cases where operation seems doubtful. He advised its use when there are recurrent symptoms. In prognosis he was guided a great deal by the condition of the iris. His operations had been done with the lance-shaped knife. He considered it of great importance to reduce carefully the edges of the coloboma, not only by external pressure, but also by the use of the blunt probe. He was also careful not to make the operation too peripheral. Peripheral wounds are more liable to cystoid scars.

DR. EMIL GRUENING, of New York, then read a paper on

IRIDECTOMY IN GLAUCOMA.

He classified the different forms of glaucoma under the following heads: 1, acute inflammatory; 2, chronic inflammatory without visible degenerative changes in the iris; 3, chronic inflammatory glaucoma with visible degenerative changes in the iris; 4, simple glaucoma; 5, intermittent glaucoma; and described cases illustrative of these different varieties.

DR. S. O. RICHEY, of Washington, did not believe that simple chronic glaucoma was entirely a local affection. He thought that it is a local expression of a cause to be looked for in the nervous system. He had used eserine with satisfaction in the early stages, but supported

it by galvanism applied to the cervical ganglia. In some cases this will result in the avoidance of an operation.

Dr. Samuel Theobald, of Baltimore, had met with one case in which an attack of pronounced acute glaucoma was cut short by the use of eserine.

Dr. Bull thought that eserine is frequently used in too strong solution. A solution of half a grain to the ounce may cause iritis after a single instillation. He never uses a stronger solution than this, and often uses one as weak as one-tenth of a grain to the ounce.

Dr. B. Alex. Randall, of Philadelphia, confirmed the remarks in regard to the value of weak solutions. In one case of severe absolute glaucoma a solution of one-eighth of a grain to the ounce was entirely successful in relieving the pain. It has been used steadily for three years with no recurrence of the severe symptoms, and without the intervention of any inflammatory trouble.

Dr. S. D. Risley, of Philadelphia, said that in experimenting with weak solutions of eserine, he had found that a distinct effect was experienced from a solution as weak as one-thirtieth of a grain to the ounce. If this was applied three times a day, it would, in two days, cause distinct brow-ache. He had seen benefit from weak solutions where stronger solutions failed to give relief.

Dr. Henry D. Noyes, of New York, said that one point to which his attention was called many years ago was that in certain instances of evident glaucoma with a large amount of refractive error, it had seemed that the aggravation of the glaucomatous disease had been dependent upon the accommodative strain. In operating he had gradually withdrawn from the extremely peripheral place of incision. He preferred to come closer to the border of the cornea than some do. This involves less risk, and is easier of performance.

Dr. Theobald's experience tended to convince him that astigmatism is frequently the cause of glaucoma.

Dr. Arthur Mathewson, of Brooklyn, said that in one case of glaucoma in which iridectomy had been done without arresting the progress of the disease, a large injection of strychnine caused a decided improvement of vision, which continued. He had used it in other cases with good effect.

Dr. Emil Gruening then read a paper on

THE USE OF THE CURETTE IN ANTERIOR TRACHOMA.

After referring to the various measures proposed for the relief of this condition, he described an operation which he had employed in eleven eyes during the past two years. A six per cent. solution of cocaine was first instilled. The surface of the cornea and the vessels present were then scraped away with a gouge-shaped instrument, and the vessels followed well on to the conjunctiva. The eye was then washed with boric acid solution and warm compresses applied for four or five days. In three days new vessels formed and the operation was repeated. The ultimate result in all the cases was highly satisfactory. In old and protracted pannus this operation may be recommended for its directness, simplicity, and efficacy.

Dr S. D. St. John, of Hartford, had used this operation in one case with the highly gratifying result of increasing the vision from $\frac{4}{CC}$ to $\frac{16}{CC}$. This has since still further improved.

Dr. H. F. Hansell, of Philadelphia, read a paper on

CORNEAL ABSCESS,

describing its symptoms and referring to the differential diagnosis between it and ulcer. He protested against the use of cocaine in abscess or other inflammatory conditions of the cornea. A few drops of a strong solution will often destroy the epithelium. Instillation of eserine alternating with atropine was recommended. Operative interference should be limited to evacuation of the pus.

Dr. Charles J. Kipp, of Newark, then made some

FURTHER OBSERVATIONS ON MALARIAL KERATITIS.

He had called attention to this condition in a paper read before the Society, in 1880. He had seen one hundred and twenty cases of the disease. In all there had been paroxysms of malarial fever, and in ninety per cent. the corneal inflammation followed a few days after a paroxysm. In twenty-five per cent. the patients had suffered from similar trouble in previous attacks of malaria. The inflammation of the cornea occurred in the form of serpiginous ulceration, with narrow prolongations. The trouble began as a line of small grayish elevations, which soon broke down, forming a furrow of ulceration. In mild cases the duration is two or three days, while in severe cases it may last several months. There is a marked tendency to recurrence in subsequent attacks of malarial fever. In a few cases he had seen a similar affection in non-malarial individuals. The treatment consists in remedies directed to the general condition, and, in mild cases, with warm fomentations. In severe cases a one or two per cent. solution of nitrate of silver applied directly to the furrows after the use of cocaine answers well. In some very severe cases the actual cautery was employed. This arrested the progress of the disease and stopped the pain, provided the malarial trouble had previously been cured.

Dr. Noyes said that during the past fifteen or twenty years he had met with cases of superficial keratitis due to malaria. It is rare to find the deeper tissues invaded. He was led to suspect a malarial origin in cases in which there is exaggerated tenderness of the supraorbital nerve and distinct anæsthesia of the surface of the cornea. The form of ulcerative keratitis which has been described, he regarded as of mycotic origin, and had cured it by scraping thoroughly the lines of infiltration.

Dr. T. Y. Sutphen, of Newark, had seen cases similar to those described by Dr. Kipp in patients suffering with malaria, and in which there had been no distinct chill; the individuals have resided in malarious districts.

Dr. John Green, of St. Louis, had seen many cases in which malarial fever was followed by superficial keratitis, or keratitis modified by neglect or improper treatment. He had not met with the form described by Dr. Kipp.

Dr. Gruening had seen this form of ulcerative keratitis, but he had associated it with the teeth. These patients had tartar on the teeth, and had been in the habit of moistening the lids with saliva, he thought therefore that the source of infection was in the mouth.

Dr. Theobald had also seen for many years this keratitis associated with malarial trouble. These cases do not always show ulceration of the cornea. He had in a general way regarded this condition as analogous to

herpes zoster. He had once or twice seen iritis associated with the keratitis following malaria. In one case of malaria he had seen this keratitis with herpes zoster of the temple.

DR. J. A. LIPPINCOTT, of Pittsburg, read a paper on

IRRIGATION OF THE ANTERIOR CHAMBER.

This procedure is useful for the removal of débris in cataract extraction and of clotted or liquid blood. In order to accomplish this successfully it is necessary to have an apparatus which can be readily made and kept aseptic; which will always be ready for use; which can be easily handled and the movement controlled with one hand; whose ejecting force is capable of being easily regulated; and which is free from liability of forcing air-bubbles into the anterior chamber. As fulfilling these requirements he exhibited an apparatus consisting of a small metal receptacle with which was connected a rubber tube ending in a metal nozzle; the flow of liquid being controlled by a short piston in a rubber handle through which the rubber tube passed. The ejecting force can be varied by elevating or lowering the receptacle.

DR. GRUENING exhibited a small flask devised by von Graefe for the same purpose.

DR. HENRY D. NOYES then read a paper on

ENUCLEATION OF THE EYE IN PAN-OPHTHALMITIS.

There have been reported by various observers thirty or forty deaths following enucleation, almost all from meningitis. About one-half of the fatal cases have occurred after enucleation during acute suppurative pan-ophthalmitis. At the New York Eye and Ear Infirmary there have been no deaths from this cause, when no additional operation in the orbit, such as the removal of tumors, etc., has been done. The number of enucleations from 1868 to 1888 was 1164; the number of evisserations 17. Pan-ophthalmitis existed in fourteen per cent. of the cases. It seems fair to conclude that while a small risk to life is incurred by enucleation of the eye, the suppose increased risk by the existence of suppurative pan-ophthalmitis is not so far justified by the facts as to bar its performance in this condition.

(To be concluded.)

AMERICAN NEUROLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Long Branch, N. J., June 26 and 27, 1889.

(Concluded from page 83.)

JUNE 27TH.—AFTERNOON SESSION.

DR. J. H. LLOYD, of Philadelphia, read a paper entitled

A LATER HISTORY OF A CASE OF FOCAL EPILEPSY FOR WHICH TREPHINING AND EXCISION OF THE MOTOR CENTRES WERE PERFORMED.

Full details of the case had been recorded at the last annual meeting of the Association. At that time but three months had elapsed since the operation, and Dr. Ferrier, of London, had stated in a discussion that the time was too short for a decisive result as to the usefulness of the operation. Now that more than a year had passed further details could be given. Before the operation the patient had had many seizures daily. There was no fit for four months after the operation. Since that time, however, there had been some ten seizures in nine months.

DR. SPITZKA said there was a minority, but a powerful minority, of clinicians and physiologists who hesitated to accept the dictum that spasms were always of cortical origin when clonic in character and local in manifestation. There were well-authenticated cases of spasms, such as are generally described as cortical, which undoubtedly had their origin in the pons or medulla. He, therefore, thought it premature to advise surgical procedure when there was still doubt as to the position of the convulsive centre. He was of opinion that the seat of irritation in the great majority of cases of epilepsy was in the lower centres, such as Nothnagel's convulsive centre.

DR. MILLS mentioned the case of a man subject to unilateral convulsions beginning in the hand. There was a scar upon the head, and trephining was done at this spot in order to relieve severe pain probably due to trigeminal irritation in the scalp or dura. This operation relieved the pain, but caused the Jacksonian epilepsy upon the other side. The operation was repeated in the same spot, the membranes and cortex being removed to some extent, and with great success. It was an apparent illustration of the fact that convulsions may occasionally be the result of operations themselves.

DR. DERCUM had seen the same case and stated that the dura was not opened in the first operation. At the second trephination the membranes were found united. There was a pachymeningitis. The patient had surgical epilepsy. Six months elapsed between the operations.

DR. LLOYD said it was a question whether one could have localized epilepsy from irritation of lower centres, as Dr. Spitzka had intimated. He had always held the idea that such spasms were of cortical origin. In the case he had just described, the absence of fits for four months led him to believe that he had removed the parts concerned in their manifestation.

He had been hopeful of the efficacy of this method in the relief of such a disorder, and was not yet willing to give up the idea that something may be accomplished in this way. He thought it justifiable to operate again in this same case.

DR. SPITZKA asked if the cortex removed had been examined microscopically, and what was the pathological condition found.

DR. LLOYD answered that the microscopist had reported atrophy of the cortical cells.

DR. SPITZKA remarked that atrophied cells could scarcely be very potent in the production of epilepsy.

DR. LANDON C. GRAY, of New York, then presented a paper upon

THE DIAGNOSTIC SIGNS OF MELANCHOLIA,

in which he called particular attention to the difficulty of diagnosis of simple melancholia at times. It was usually, when in mild degree, confused with neurasthenia. He had recently made a study of eighteen cases of this form, and pointed out what he considered the three cardinal symptoms, viz., depression, insomnia, and post-cervical ache. The last named he thought especially characteristic. This pain was sometimes neuralgic in character, at others vague and continuous. Simple

melancholia such as this should not be confounded with neurasthenia, or melancholy states dependent upon hepatic or nephritic disease, or with non-typical forms of insanity.

DR. H. S. UPSON, of Cleveland, then read a paper in which he considered the relations between

MULTIPLE NEURITIS AND INFECTIOUS CEREBRO-SPINAL MENINGITIS.

Dr. Mills had first suggested the possibility of connection between the two. His own case was briefly as follows: A woman, aged twenty-seven, had intense pain and tenderness in the extremities together with stupor and slight opisthotonos; no electrical examination could be made because of the extreme hyperæsthesia. She had had a multiple neuritis a year before but recovered. The autopsy revealed congestion of the pia of brain and cord with marked serous effusion, and a microscopic examination of the ulnar nerve revealed interstitial inflammation there. In the opinion of the author the nerve trunk inflammation was not parenchymatous, but rather of the membranes, and was analogous to the process in the brain and cord; the nerve fibres were secondarily involved. He had not looked for bacteria.

DR. MILLS naturally felt interested in the case. He had had an autopsy on one of his own cases. Portions of nerves and sections of the brain and cord had been examined by Dr. Gray, of Washington, and this examination proved conclusively the association of neuritis with cerebro-spinal meningitis.

DR. SPITZKA referred to the vacuoles in the author's sections, and said retarded lymph outflow might be important in causing the death of tissue and the formation of gas bubbles which these vacuoles must be considered to represent. He had noted also two bodies in the sections larger than ordinary leucocytes, very delicately stained, which the author should have carefully delineated.

DR. C. K. MILLS, of Philadelphia, then gave an abstract of a paper by DR. J. T. ESKRIDGE, of Denver, on a

CASE OF ABSCESS OF THE BRAIN; OPERATION; DEATH ON THE NINTH DAY.

The patient had had typhoid fever. Two months later there was purulent inflammation of the middle ear, and not long after symptoms of brain irritation followed, such as headache, delirium, persecutory delusions together with paralysis of the right hand and right angle of the mouth. The skull was trephined over the face and hand centres, and a purulent inflammation was found under the dura. The wound was then dressed and the patient died nine days later. A widespread suppurative meningitis was found at the autopsy. Dr. Mills thought the case of great practical value. He thought trephining should have been performed in two places, at the centre which had been properly localized and also over the mastoid region where the inflammatory process had originated.

DR. B. SACHS, of New York, presented a paper on the

PERONEAL FORM OF PROGRESSIVE MUSCULAR ATROPHY.

The author reiterated his statement of last year that this form was closely related to Duchenne's type. He gave very full details of the cases of two brothers that had recently come under his observation through the kindness of Dr. Gibney. The boys were thirteen and ten years of age. There was a gradual development of double clubfoot in both at the age of five years, followed by an atrophy proceeding upward, beginning in the leg and toe muscles and spreading to those of the thigh; in one case also involving muscles of the upper extremities. The knee-jerks were present. In one there was general anæsthesia, in the other paræsthesia. There was full degenerative reaction in some of the muscles in one boy, partial in the other. The progressive wasting rendered treatment of this form of clubfoot less satisfactory than that of congenital cases. He would suspect this peroneal form in all cases where acquired clubfoot was associated with progressive wasting of the leg muscles, and particularly if heredity or family occurrence of the disease could also be established.

DR. SINKLER could recall several similar cases, one in particular of two brothers. But doubtless more would be seen if careful attention were paid to the matter.

DR. BIRDSALL did not think the presence of knee-jerk so important a diagnostic point as the author seemed to regard it. He had seen a few cases of old poliomyelitis where the paralysis and atrophy were below the knee, and yet the knee-jerks were quite active on both sides. It could not, therefore, be an essential point in diagnosis.

DR. BULLARD had also observed the presence of the knee-jerk in old cases of poliomyelitis.

DR. PRINCE asked if the author had said that the absence of pseudo-hypertrophy was a diagnostic point between this form and primary myopathies, and was answered in the affirmative. He did not consider this true.

DR. SPITZKA asked if the symmetry and the coincidence of time and intensity, as shown in the photographs, were always the case, and was answered in the affirmative.

DR. SINKLER corroborated two of the speakers as to the presence of the knee-jerk in cases of old poliomyelitis, and cited an instance from his own experience.

DR. GRAY objected to the division of progressive muscular atrophy into groups. Why should there be an arm type, a face type, a leg type? Such division might be carried out indefinitely. A more useful classification would be upon the pathology of the disease, a division into central, muscular, and peripheral nerve lesions.

DR. SACHS said he did not lay great stress upon the presence or absence of the knee-jerk. Yet, in extreme atrophy of the vasti from poliomyelitis the knee-jerk was always absent; and, if it were present, he should consider it a case of progressive muscular atrophy. He had, himself, tried to discard subdivisions as much as possible, but the present classification was a clinical necessity. A better might be made when the pathology is more accurately determined. At present there were spinal and non-spinal cases, but there was no certainty as regarded peripheral nerve cases.

DR. MORTON PRINCE, of Boston, then exhibited some microscopic specimens from the muscles of a case of

PSEUDO-HYPERTROPHY.

The patient was now twenty-eight years of age. The specimens showed a large quantity of connective tissue,

hypertrophy of a few fibres, and great atrophy of many of the fibres. There was also great loss of striation, but no fatty or granular degenerations and no vacuolization.

The meeting then adjourned.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, May 20, 1889.

THE PRESIDENT, CHARLES S. WOOD, M.D., IN THE CHAIR.

DR. T. H. MANLEY read a paper on

THE OPERATION FOR STRANGULATED HERNIA BY THE MCBURNEY METHOD, WITH REPORT OF THREE CASES.

He gave a description of the operation of McBurney, and its advantages. As far as he could learn, he was the first to report any cases of strangulated hernia, which had been dealt with by this method, and claimed that for this class of cases it seemed the ideal operation; the operative procedure consisting of a few simple principles which, if correctly understood and intelligently applied, must, generally, lead to successful results.

Briefly stated, they were—the ligating of the sac and the sewing down of the cutaneous margin of the incision to the conjoined tendon, and the aponeurotic structures, in the inguinal variety of rupture; and the securing of a dense cicatrix over the internal ring, the canal having been previously opened to this point.

Case I. was a man, æt. forty-five, who had had a hernia on his left side as long as he could remember, requiring him constantly to wear a truss. At times when his bowels were constipated and he strained more than usual at stool, the protrusion would come down under the bulb of the truss. Sometimes he would have to lie quiet a few hours before he could readily return it. On the morning before he entered Harlem Hospital, however, it came down in greater volume than ever before, and he could not return it. He came into the hospital in the evening and an immediate operation was advised, but he would not consent, thinking that he might reduce it himself, later. On the morning of the third day vomiting commenced, and he was very much reduced in strength when he asked to have an operation done.

In the afternoon he was put under ether, an incision was made from a point about the middle of that line, bounded above by the anterior-superior iliac spine and the pubic symphysis, just over the internal ring; the incision was carried downward over the inguinal canal over the protrusion to nearly the base of the scrotum. By dissecting from above, at the outset, as recommended by McBurney, the neck of the sac was first sought, and the opening continued downward till the serous covering was reached and divided. The hernia was found to consist mostly of intestine; its coat was of a dark, rather ashen hue, and was constricted at the external ring. Dr. McBurney advises that the testis and spermatic cord be left undisturbed, but in this case there was no true sac, neither was the cord or testis visible. In opening up the canal the small, atrophied, undeveloped, generative organ was found and removed. The bowel was now returned, the sac carefully dissected away from adhesions, drawn down, ligated and cut off high up, silk ligatures being employed. The borders of the incision were sewed down, on the one side to the conjoined tendon, and on the other to the fascia transversalis and the margin of the divided canal—six sutures were employed on each side; then both edges of the wound approximated by the retentive or tension sutures, the whole line of incision dusted with iodoform and carefully packed with iodoform gauze. Over this the usual dressings were applied.

The patient survived the operation but three hours. In this case it was claimed that in delaying the operation until there was profound exhaustion, and septic infection had full play, the effort to relieve him was made only as a forlorn hope, and that had an operation been done earlier he would undoubtedly have recovered.

Case II. was in a man of twenty-five, with a history similar to the preceding as regards duration. He had had hernia from boyhood, and on the day of entrance to the hospital the rupture came down, after he had made a heavy lift; and as is usual in those cases, he came for relief to the hospital only after his family physician had failed to relieve him. His hernia was on the left side, very small, not tender or very sensitive to manipulation. He suffered no pain whatever, and though an operation was advised before constitutional symptoms might arise, he declined it. The following day signs of strangulation were present, and septic infection was undoubtedly at work.

The small protrusion of the previous day had greatly enlarged. He had incessant vomiting, a very weak pulse and was greatly prostrated. It was feared, under the circumstances, that he would probably meet the same fate as the first.

His case was dealt with as was that of the man who succumbed; though owing to some difference in the anatomical arrangements of the tissues, a slight modification was made. Here the hernia was found to be congenital, the sac containing, along with the testis, a large mass of omentum and a small knuckle of intestine. As the testis was much smaller than its fellow and, probably, functionally useless, it was enucleated. In this instance a speedy recovery followed operation, and he left the hospital cured on the twenty-ninth day.

Case III. was a female, aged fifty-four, with a history of having worn a truss more than fifteen years. Her hernia was down ten days when she was brought to the hospital. She was greatly collapsed, with cold extremities and persistent vomiting. It was a question as to whether she could endure an operation. In this, as in the others, the same method of operation was undertaken. Her hernia was of the indirect, inguinal variety, following along the round ligament to the labium majus. She had a thick, fat, pendulous abdomen, requiring a very deep incision to expose the constriction, which was found just inside the ring. There seemed to be no canal of any length. The sac, which was as thin as gauze, was adherent to everything—on the outside to the connective tissue, and on the inside below to the omentum, which partly filled it. A very small portion of intestine was found tightly nipped at the point of strangulation. This woman made a good recovery, though owing to the great depth of fat in the region of incision, the tension on the sutures was so great that they gave way on the fifth day, and the borders of the wound healed by granulation.

In operating on patients with a thick layer of adipose tissue hereafter, the reporter said he would advise to dis-

pense with the suture and allow the part to close by the slower process of granulating, as in *them* the suture gave much pain, and was sure to work its way out.

Dr. Manley advised the McBurney method for every form of *strangulated hernia*, whenever or wherever found, and said that if done early, by one familiar with the anatomy of the parts, under strict antisepsis, every case should be saved, for, unlike any procedure yet advised, with it we could not only relieve the strangulation, but promise the patient a permanent cure of his hernia.

He said that in this operation we eliminated the two great dangers always to be feared with the older methods, viz., septic infection and hemorrhage. The parts being thoroughly exposed, could be completely relieved of any taint, and with the deeper structures immediately accessible, extensive hemorrhage was impossible. The operation was indeed of a most revolutionary character, and was naturally approached with timidity by those who had not tested its simplicity and great efficacy in relieving a condition which[1] Bryant says is attended with a mortality of more than fifty per cent. when sought to be relieved, even in the hands of the most experienced operators.

DR. GEORGE S. HUNTINGTON said that he had had a certain amount of experience with this operation from being associated with Dr. McBurney at the Roosevelt Hospital. The McBurney operation was especially satisfactory when performed for the relief of strangulated hernia, since, in addition to saving the patient from impending death, it afforded an excellent chance of a radical cure of his trouble. Among the particular advantages of the procedure were the open wound, with its facilities for antiseptic treatment, and the total obliteration of the sac. As to the approximation of the integument and the deeper structures—the conjoined tendon of the internal oblique and transversalis above and the transversalis fascia below—it was for the purpose of more readily accomplishing this that Dr. McBurney advocated the passage of lateral tension sutures. If the two lateral tension sutures took in at first little but the integument, there was not likely to be much difficulty, and the careful adjustment of these tension sutures had thus far given very satisfactory results. He said he should be somewhat afraid of leaving so large a wound without any sutures, for the reason that, on account of its large size, there would seem to be a probability of the cicatrix being rather weak.

DR. J. G. TRUAX said that he had the opportunity of being present at Dr. Manley's operations, and the results obtained certainly seemed very gratifying to him. The McBurney operation appeared to be a decided improvement over every other with which he was acquainted. It had been his lot to operate for strangulated hernia a few times before this method was known, and he could only say that he would have considered it a great boon had such a procedure been at his disposal.

DR. S. T. ARMSTRONG said he had noticed one point in Dr. Manley's paper which he thought called for comment, and that was the use of silk ligatures. Personally he had always employed catgut, because it was non-irritating and readily absorbed. Another point worthy of notice was in regard to congenital hernias. In a case of his own there was no spermatic cord present, but there was a mass of omentum. There the testicle was in an apparently normal condition, and it was an absolute impossibility to ligate the sac. Under the circumstances, therefore, the sac was made as tense as possible; but he could hardly hope for a successful result, as he did not have the patient's consent to remove the testicle. He would like to inquire whether Dr. Manley would feel justified in performing castration in such a case.

DR. MANLEY said that, as he had stated in his paper, different cases required different modifications of the operation. As to the character of the suture, catgut was very unreliable. When the surgeon returned the omentum to the abdominal cavity he wanted to feel sure that his ligature would not stretch or slip or allow bleeding, and personally he did not feel safe without he used silk. It was true that catgut was non-irritating and readily absorbed; but when something which was strong and would not become displaced was wanted, there was nothing like silk.

DR. ARMSTRONG explained that he referred to the ligature applied to the sac.

DR. MANLEY said that he would not mind a little irritation about the stump of the sac, because there was an open wound to deal with. As to the removal of the testicle, he would not do this without first explaining to the patient that this might be necessary for the successful completion of the operation. If the patient was assured that he would have complete virile power with the testicle remaining, he would not be apt to refuse his consent to its removal if it proved necessary.

[1] Bryant's Prac. of Surg., 3d ed., p. 307.

CORRESPONDENCE.

CULTIVATION OF ANAEROBIC BACTERIA.

To the Editor of THE MEDICAL NEWS,

SIR: In a recent number of your journal, Dr. Smith published a letter stating that the method of making anaërobic cultures proposed by me in THE NEWS of March 30th is the same as one given by Escherich in 1886. It is true we both use glass and mercury, but here the similarity ends. Escherich filled the tube with mercury, then ran in a fluid on top. I put in a solid medium, and the mercury on top. Escherich's method has the advantages and disadvantages of a fluid culture, mine of a solid culture. Escherich's method requires special apparatus, mine none. I have known and practised Escherich's method for a long time together with my own; so different are they that the two are never indicated in the same case.

My method is one for solid cultures, yet Fränkel (*Centralblatt f. Bact. u. Parasit.*, 1888, Bd. 3, p. 735) in treating of these methods does not mention Escherich's; indeed, he passes by fluid cultures as of little or no value.

JOHN A. JEFFERIS.

BOSTON.

NEWS ITEMS.

Postponement of the Meeting of the Medical Society of the State of Pennsylvania.—At a meeting of the Committee of Arrangements held at Pittsburg on July 15th, the following resolutions were adopted:

Whereas, The annual meeting of the Medical Society of the State of Pennsylvania, which convened at Pitts-

burg, June 4, 1889, was adjourned until the first Tuesday of the following September, by reason of the distress and confusion caused by the flood in the Conemaugh Valley; and

Whereas, It is the opinion of many prominent members of the Society that a successful meeting of the Society cannot be held during the present calendar year, for many reasons, the chief of which is, that the sorrow and suffering caused by the recent great calamity still oppress the entire community to such an extent as to interfere with an early meeting; therefore, be it

Resolved, That the meeting of the Medical Society of the State of Pennsylvania, which was adjourned to meet September 3, 1889, be still further adjourned until the second Tuesday of June, 1890; also,

Resolved, That a copy of these resolutions, addressed to the members of the Society, be sent by Dr. William B. Atkinson, the Secretary, to the secretaries of each Medical Society in the State, and that they be published at as early a date as possible in the medical journals of the State.

Expulsion of a Member from the Medical Society of South Carolina.—At a special meeting of this Society held July 18th, the following resolutions were adopted:

Whereas, It has been brought to the notice of the Society that Dr. T. Ballard McDow has been proven by his own confession guilty of immoral, unprofessional, and ungentlemanly conduct, and that after due notification the said Dr. McDow has failed to appear before the Society to exonerate himself from the said charges;

Resolved, That he be expelled from the Society.

2. That the Secretary be directed to publish a copy of these resolutions over his official signature in the three daily papers of this city, and in two reputable medical journals.

CHARLES W. KOLLOCK, M.D.,
Secretary of the Medical Society of South Carolina.

Dr. Brown-Sequard's Hypodermic Fluid.—The extraordinary statements made by Professor Brown-Séquard as to the efficiency of hypodermic injections of fluid expressed from the testicles of young animals in senile debility have been to a certain extent confirmed by M. Variot, who made a communication to the Société de Biologie on June 29th. The patients chosen were debilitated men, aged 54, 56, and 68 years respectively, and they were not informed of the nature of the treatment adopted. In all three cases the injections were followed by general nervous excitement, increased muscular power, and stimulation and regulation of digestion. M. Brown-Séquard said that M. Variot's observations disposed of the objection that the results he had observed in himself were due to "suggestion."—*British Medical Journal*, July 6, 1889.

The International Hygienic Congress.—We read in the *Lancet* of June 22d, that a largely attended meeting was held at the Parkes Museum of the delegates appointed by various universities, colleges, and learned societies to organize the arrangements for the International Hygienic Congress of 1891, which will meet in London. Sir Spencer Wells, who had attended the meetings of previous congresses in continental capitals, took the chair, and Dr. W. H. Corfield and Mr. Shirley Murphy, the English members of the Permanent Committee of the International Congress, acted as honorary secretaries. Dr. Corfield explained the preliminary steps that had been taken to constitute a general committee, and the following gentlemen were elected members of an executive committee with power to add to their number—Sir Douglas Galton, K.C.B., Professor Frankland, Professor Hayter Lewis, Dr. Thorne, Dr. Mapother, Dr. Mouat, Mr. E. Hart, Professor Corfield, and Mr. Shirley Murphy.

Recent Appointments in the Prussian Army Medical Corps.—Prof. E. von Bergmann has lately been appointed Surgeon-General of the First Class *à la suite* in the Prussian Army (Sanitary Corps), with the rank of Major-General; and Prof. von Esmarch, of Kiel, has had a similar distinction conferred on him.—*British Med. Journal*, June 22, 1889.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM JUNE 10 TO JULY 20, 1889.

FESSENDEN, C. S. D, *Surgeon*.—To proceed to Cairo, Illinois, on special duty, July 8, 1889.

LONG, W. H., *Surgeon*.—Granted leave of absence for twenty-eight days, June 18, 1889.

AUSTIN, H. W. *Surgeon*.—To proceed to Cairo, Illinois, on special duty, July 8, 1889.

IRWIN, FAIRFAX, *Surgeon*.—Granted leave of absence for ten days, July 6, 1889.

MEAD, F. W., *Passed Assistant Surgeon*.—Granted leave of absence for thirty days, June 24, 1889.

MAGRUDER, G. M., *Assistant Surgeon*.—Relieved from duty at Baltimore, Maryland, and ordered to report to the Supervising Surgeon-General for duty as Acting Chief Clerk and Attending Surgeon, July 10, 1889.

GOODWIN, H. T., *Assistant Surgeon*.—Granted leave of absence for thirty days, July 8, 1889.

VANSANT, JOHN, *Surgeon*.—When relieved to proceed to Mobile, Ala., July 11, 1889.

MEAD, F. W., *Passed Assistant Surgeon*.—Relieved from duty as Acting Chief Clerk and Attending Surgeon; ordered to St. Louis, Mo., July 11, 1889.

WILLIAMS, L. L., *Passed Assistant Surgeon*.—Relieved from duty at Cape Charles Quarantine Station; ordered to Baltimore, Md., July 10, 1889.

KALLOCH, P. C., *Passed Assistant Surgeon*.—Granted leave of absence for thirty days, July 15, 1889.

PETTUS, W. J., *Assistant Surgeon*.—When relieved to proceed to Marine-Hospital, Boston, Mass., for duty, July 18, 1889.

WOODWARD, P. M., *Assistant Surgeon*.—Granted leave of absence for thirty days, July 15, 1889.

VAUGHAN, G. T, *Assistant Surgeon*.—Relieved from duty at Boston, Mass.; ordered to Norfolk, Va., July 18, 1889.

STONER, J. B., *Assistant Surgeon*.—Granted leave of absence for twenty-five days, July 15, 1889.

GEDDINGS, H. D., *Assistant Surgeon*.—Relieved from duty at Baltimore, Md.; ordered to Key West Quarantine Station, July 18, 1889.

WENENBAUER, C. P., *Assistant Surgeon*.—Relieved from duty at Norfolk; ordered to Galveston, Texas, July 18, 1889.

GROENEVELT, J. F.—Commissioned as Assistant Surgeon, July 11, 1889 Ordered to Gulf Quarantine Station for temporary duty, July 20, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, AUGUST 3, 1889. No. 5.

ORIGINAL ARTICLES.

THE PREPARATION OF ABSORBABLE DRAINAGE-TUBES FROM THE ARTERIES OF ANIMALS.

BY HENRY G. BEYER, M.D., PH.D., M.R.C.S. (LOND.),
PASSED ASSISTANT-SURGEON U. S. NAVY.

EVERY surgeon will admit that the absorbable drainage-tube of Neuber, Trendelenburg, and Macewen, though very much superior to the ordinary rubber drainage-tube, has some objectionable features about it, which even its originators have freely acknowledged. It had repeatedly occurred to me that the arteries of different animals might be utilized for this purpose and be made into drainage-tubes by some suitable method of preparation, but lack of opportunity has prevented me from making any experiments with regard to it. In October last I suggested this to Professor S. H. Weeks, since which time he has interested himself greatly in the subject.

After some preliminary but highly satisfactory experiments on the lower animals, Dr. Weeks began to use them in his extensive private and hospital practice with even more success than he was led to expect from his experiments on animals. The results so far obtained by him will be found recorded in the *Transactions of the American Surgical Association* for 1889, in which the author claims these tubes to be superior to any now in use, and supports his claims by numerous examples of cases.

The absorbability and practicability of the tubes having been established in this manner, it became desirable that their method of preparation should be as much as possible perfected and elaborated. This task was assigned to me, and Dr. Weeks very kindly offered me all the necessary laboratory facilities to carry out the experiments required.

In the preparation of drainage-tubes from the arteries of animals, two things must be kept constantly in mind, namely: (1) Any method of preparation to be of value must insure the absolutely aseptic condition of the tubes as its invariable result; and (2) all the different manipulations pertaining to the method about to be described must be carried out under strictly antiseptic precautions, just as much as any surgical operation for which the tubes are intended.

The arteries to be used must be obtained fresh from the ox or cow and scrupulously examined as to their soundness. The slightest imperfection with regard to this must be deemed sufficient to eliminate them; the material is cheap, easily obtained, and plenty. The arteries coming from vigorous young cows or heifers will be found to give the best results.

As the arteries are bought from the butcher a good deal of the fatty peri-arterial tissue, together with nerves, will be found adhering to them. This tissue is easily removed by means of a pair of scissors, and the arteries, after having been freed from it, are put into a clean porcelain dish and allowed to soak in clean cold water for two hours; should the water become discolored, which is most always the case, it must be renewed as often as is necessary until it remains colorless and every little blood-clot has been washed out. Any little extra attention which is paid to this point will amply repay in the end.

After the arteries have thus been thoroughly cleaned and soaked in water, the next thing to be done is to remove as much as possible of the adventitial coat, which has become very loose and pliable by the maceration in water. For this purpose the arteries are taken out of the dish and fastened by means of tacks at both their ends on the carbolized edge of a clean table, at the same time putting them considerably on the stretch. This fibrous or adventitious connective tissue, forming the outer coat of the arteries, is now seized with the thumb and index finger of the left hand and cut away by means of a sharp pair of scissors, held in the right hand; the artery must be gone over in this manner several times, and be kept moist during this entire process by means of a sponge soaked in water until the pink musculo-elastic circular coat begins to shine through the remaining and very thin coat of adventitia. It is considered neither possible nor necessary to remove, without serious injury, every trace of the adventitial coat and the thin film which usually remains is soon absorbed; it seems to favor the growth of granulations toward the tubes, and, hence, forms a desirable rather than an objectionable feature. On the other hand, when too much of this tissue is allowed to remain, the tubes become slightly thicker than desirable, and, of course, would be absorbed more slowly.

The removal of the adventitia having been accomplished in the above-described manner, the next step to be taken is to boil the arteries for fifteen minutes in distilled water, the boiling to be done in a porcelain dish. By this means we not only harden the arteries to a certain extent by causing the thorough

coagulation of their albuminoid constituents, but we also most thoroughly sterilize their tissues. After the boiling, the arteries are placed in another porcelain dish containing a 5 per cent. solution of carbolic acid in water, and any superfluous shreds of fibrous connective tissue may easily be removed with the fingers, which must, of course, be thoroughly clean and carbolized. Holes are now cut into the coats of the arteries with a pair of sharp, clean scissors, or, better, with a punch which might be made for this purpose. An instrument like the one now used for canalization, but, of course, much smaller, would no doubt answer the purpose very well indeed, and produce openings perfectly uniform in size, a matter which cannot be controlled in free-hand cutting by means of a pair of scissors. After the holes have been cut they are preserved in a 5 per cent. solution of carbolic acid in water and kept there for the next twenty-four hours, changing the solution once or twice during that time.

If the utmost cleanliness has been observed thus far, the tubes ought to look almost white at this stage of the process, and while floating in the solution but a very thin film of fibrous connective tissue may still be seen adhering to them. After they have been thoroughly carbolized in this manner they must be drawn over glass rods of different sizes and sufficiently large to put them slightly on the stretch. This must be done very carefully and with thoroughly clean and carbolized hands. The slight stretching which they experience over the glass rods will tend to make their coats still thinner. Whatever their condition on these glass rods, whether thick or thin, it will be the state they will preserve when finished.

These glass rods, with the arteries in place, are now slipped into a long, wide-mouthed, thoroughly clean bottle containing 95 per cent. alcohol, which will need to be changed but once during the next twenty-four hours. After keeping them two hours more in absolute alcohol, they must be removed from the glass rods very carefully without being twisted; traction should be made in a straight line and with hands that are not only perfectly sterile but which must have been dipped into absolute alcohol.

From the glass rods they are immediately dropped into a wide-mouthed bottle containing the pure oil of juniper berries in quantity sufficient to keep the tubes thoroughly immersed. Here they may be allowed to remain for forty-eight hours without being disturbed. It will be seen that the walls of the tubes in this oil very soon become thoroughly transparent, assuming, at the same time, a very distinct and beautiful amber tint, not unlike that possessed by the bone-tubes of Neuber. Finally, these tubes are transferred from the oil into absolute alcohol, in which they are preserved until used.

It will be noticed that the above-described method of preparation of the arteries of animals for drainage-tubes is, with the exception of a few unessential modifications, similar to the one which is used in the preparation of bone-tubes by Prof. G. Neuber, one of the most zealous and successful promoters of antiseptic surgery in Germany, and formerly assistant to Professor von Esmarch at Kiel. Kocher's method, as practised in the preparation of catgut ligatures, was also embodied in the above method for the arteries, for the reason that experience has proved that the ligatures made according to this method are absolutely safe and thoroughly trustworthy; hence these ligatures are now used by the most experienced surgeons in preference to all others.

The oil of juniper seems to render the arteries, previously hardened in alcohol, still harder, and, consequently, makes them more efficient and serviceable than those hardened in alcohol alone. The simplicity of the method is an argument in its favor when compared with the method of preparation of drainage-tubes out of bones. It is especially advantageous that the surgeon, with but little care and expenditure of time, can make the tubes himself, needing neither chisel nor drill, and has the satisfaction of rendering them completely aseptic under his own personal supervision. Tubes of all sizes and diameters are found already formed in the animal, the thickness of these coats varying according to diameter, and both being well proportioned, one method suffices for them all, the largest requiring no more work than the smallest; they can be made of any desired length, and admit of being cut with the scissors or knife without splitting or losing their shape or contour in any way.

In conclusion, it must be mentioned that these tubes should not be allowed to remain too long in carbolized solution before being introduced into the wound, since this would cause them to swell up too much, and a few seconds' immersion is quite sufficient for the purpose of removing the few drops of alcohol which adhere to them. The process of absorption is prompt, thorough, and highly satisfactory in every respect, taking place after the manner so often described for catgut ligatures.

THE THERAPY OF OCEAN CLIMATE.[1]

BY ALBERT L. GIHON, A.M., M.D.,
MEDICAL DIRECTOR, U. S. NAVY.

THE elements of ocean climate are necessarily few: A superincumbent atmosphere free from impurities in proportion to the distance from land, with a temperature of very limited range through the absence of local disturbing agencies, and having diffused through it a correspondingly uniform amount of aqueous vapor. Nowhere over the ocean

[1] Read before the American Climatological Association, June 24, 1889.

does the mean daily fluctuation of the temperature of the surface quite amount to a degree. The temperature of the atmosphere has a rather wider range than that of the sea on which it rests, but this is very much less than anywhere on the land.

Only the weeds of the Sargasso Sea enjoy perennial abode among these simple climatic conditions. The longest passages of sailing vessels seldom extend beyond two or three months. Were they years long, the monotony would pall upon the voyager and make him sigh for the green fields and sandy plains of terra firma with all their unwholesome smells.

Next to the transitory exposure to ocean climate in the course of a sea-voyage is the residence on some small mid-ocean island where there are few vicissitudes of weather, short range of temperature, and none of the physical befoulments from masses of men and animals or decaying vegetable matter. Here, even better than on shipboard, is to be found the opportunity for making ocean climatic influences available as curative measures.

The therapeutic uses of climates, as of drugs, are to be inferred from their physiological or pathogenetic effects. What is the influence of life upon the ocean on the well man-of-the-sea? He is of two orders: One the merchant sailor, who begins his career after the land-shark has left him penniless, debauched, and diseased; who is kennelled like a brute in a gloomy, filthy, unventilated forecastle, is ill-fed, scantily clad, maltreated, and overworked. What of value can be learned from his physical history beyond the general fact, that such as survive come into port after a long voyage, notwithstanding the sparse fare, exposure, dirt, neglect, and ill-usage, still strong and vigorous? Though much of this is due to a certain enforced regularity of life and the interrupted sacrifice of health at the shrines of Bacchus and Venus Porcina, much is also due to the invigorating influence of protracted exposure to sunlight and pure air in their out-door work.

Of the better class of the men-of-the-sea—the man-of-war's-man—we might expect to learn something more definite. He too is recruited from the slums of the shipping quarters, but he is required to be clean, sober, and absolutely free from disease when enlisted, and after that is well-fed, clothed, and treated, so that his medical history may be assumed to give some indication of the causes of disease to which he has been subjected; but the medical returns of the various naval services are chiefly summaries of the cases of disease and injury treated, arranged, so far as the British and American Navies are concerned, under the customary nosological classification of the London College, and consequently, indicating but little as to the precise first causes of these diseases, whether contracted during visits on shore or developed *ab origine* in well men during their sojourn upon the high seas from causes there in operation. The rheumatism of the syphilitic, for which Neptune cannot be blamed, and the rheumatism of bad weather, which is a very decided salt-water affection, usually go into one class to swell a common total. The pulmonary phthisis for which an ancestor is responsible and the phthisis which the foul, damp air of the unventilated berth-deck has developed are undistinguished, though only the latter is of statistical interest as a product of ocean pathogenesis. The fact, too, that naval medical returns include those of the naval establishments on shore as well as those afloat, prevents the identification of the strictly nautical affections, but, notwithstanding this, it is interesting to note in the last published report of the Surgeon-General of the Navy of the United States, that among a total of 8550 admissions of sick and disabled officers and men of the Navy and Marine Corps, nearly ninety per centum were included in the following few classes, to wit:

Casualties	1917
Venereal diseases	1071
Diseases of the integument	888
Malarial and other fevers	888
Affections of the nervous system	489
Diarrhœal affections	483
Rheumatism	521
Inflammatory affections of the respiratory tract	1149

the remaining 1144 being distributed over a wide range of titles of which many, as adynamia, cephalalgia, constipatio, odontalgia, etc., have no special significance. It is probable that only about one-fourth of the cases of disease occurring at sea are attributable to any of the circumstances of oceanic life, and these are almost entirely inflammatory affections of the air passages and intestinal tract, neuroses including nausea marina, and rheumatism.

It is evident there is no saving balm in salt water, which hardens the sailor against aching muscles and swollen joints, and such of their ailments as are not the results of exposure to vicissitudes of weather are caused by decks needlessly wetted for cleaning, and the overcrowding of their badly ventilated quarters—but this is man's work, not nature's. While these are characteristic affections of the men that follow the sea, these complaints are not in any sense climatic, but due to the occupation of the seaman and to local unsanitary conditions, and the greater proportion of them are avoidable. Consequently, they have no bearing upon ocean climatic therapeutics, which does not comprehend exposure to bad weather, wet and overcrowded decks, or exhaustive labor upon sails and anchors.

What then, since there are so few causes of disease in operation, may the seeker after health hope to gain by a sea-voyage or by prolonged residence on

some ocean island where all the conditions of sea-life prevail?

First, if season, course, and destination be judiciously chosen, the invalid will obtain, on a long voyage, in a comfortable sailing vessel, *rest*—of mind and body—a condition of absolute insouciance, and relief from the cares and distractions, the daily worries and anxieties of life, the interruptions and noise and turmoil and excitements which railroads, telegraphs, and newspapers bring into the very sick-room on land.

If not so completely bed-ridden (in which case he probably ought not to go to sea at all) but that he can lie in an easy chair on deck, he will be able to breathe and bathe in an air that is barren of every impurity, and with every inspiration experience a sense of pleasurable invigoration.

If sea-sickness is not an indomitable idiosyncrasy, as I have known it to be even in captains of the navy, he will, after a few days, when he "gets his sea-legs," as sailors term it, find inexpressible delight in pacing the narrow bounds of the quarter-deck, and lengthen the hours of this gentle exercise until they become whole watches long.

Once accustomed to the motion of the vessel and of the sea, nausea will give place to appetite, which is sharpened as well for old salts as land-lubbers, and the plainest food will be taken with unwonted relish, betokening improved assimilation. If care be had to overcome the usual tendency to constipation, ingestion may go on without restraint. The eagerly anticipated meal-hours become the eventful marks of the passage of time. The whilom patient eats and sleeps, and wakes to find new zest in the simple employments of the day. Rocked in the cradle of the deep, the ocean's lullaby soothes the sufferer into forgetfulness of his ills.

A long sea-voyage in temperate latitudes on board a clean, roomy vessel, well outfitted and equipped, is a judicious therapeusis for chronic invalids of almost every class; but to be effective the ship itself must be free from the dirt, dampness, and bad ventilation which, under aggravated circumstances, made scurvy, ship-fever, and dysentery actual scourges of sea-life, and in a less conspicuous degree show their effects in the rheumatism, phthisis, and diarrhœa which are needlessly frequent among sailors. Only a clean ship can be a healthy ship, and it is just as axiomatic that a foul ship will develop, breed, and transport disease. The filthy mess in the bilges of old-time men-of-war, where the heresy of naval hygiene was not permitted utterance—the putrid mixture of salt- and fresh-water, coal-dust, oil, provisions, and decomposed timber—an artificial marsh as pestiferous as any miasm-breeding quagmire on land, gave forth emanations which blackened the paint and pervaded the atmosphere, enveloping the ship with a polluted aureole that clung to her through all her course. In those days the scent of bilge-water was considered as inseparable from a vessel as the barnacles on her bottom. If naval medical officers have lacked opportunities for distinction as operators or diagnosticians, they have still fought a good fight and gained a glorious victory in the cause of true medicine in the revolution they have effected in methods of life at sea. Virulent diseases have become extinct, and the heights of sanitary independence have been gained, whence it is possible to point out the weak places through which the enemies of human health gain entrance, and at which their further passage must be prevented.

Under any circumstances, however, a ship is useful only as a temporary expedient. In the often-quoted instance of Collingwood's flag-ship, "which with a crew of eight hundred men was, on one occasion, more than a year and a half without going into port, and never had more than six on her sick-list; this result was occasioned by his system of arrangement and his attention to dryness, ventilation, etc., but above all by the contented spirit of the sailors, who loved their commander as their protector and friend, well assured that at his hands they would receive justice and kindness, and that of their comforts he was more jealous than of his own;" but the circumstances were exceptional, and in the case of confirmed invalids a too prolonged residence on board ship becomes depressing. Hence, stationary hospital-ships are not desirable where local insalubrious influences do not prevent establishing the sick on shore. Gliding over the water day after day with the consciousness of progress and the prospect of an end, however distant, is quite another matter from riding at anchor in a harbor, watching, from a sick cot, green fields and purple hills. There is something, too, in the tonic touch of earth upon one who has been very long ill at sea—some mysterious influence affecting the molecular relations of the human body, which cannot for too great a time be intermitted, so that the therapeutic advantages of cruises are only limited.

The slowly convalescent from whatever disease—from protracted fever, chronic diarrhœa, nervous asthenia—the incipient pulmonary case, the feeble, fretful valetudinarian, the overworked business man, the broken-down woman, the child with slender hold on life, if sea-sickness is controllable, will, after a few days of pleasant sailing, recover appetite, and often recuperate with marvellous rapidity. The inebriate removed from the temptation or the means of self-gratification; the not inconsiderable class of cases of sexual exhaustion and of other forms of impaired nervous power; the thousands of victims of their own follies who fill the sanataria, private hospitals, and health-resorts; the irritable *malade imaginaire*, and melancholy hypochondriac and misanthrope are especially benefited by the quiet restfulness of a long sea-voyage

in pleasant weather, when the assimilative process becomes the dominant function, and the worn brain and flaccid vessels and feeble lungs are beguiled into feeding on what will make them strong again.

Indeed, so serviceable a measure for restoring health ought, ere this, to have led to special provision for accommodating invalids—floating sanataria—sailing vessels by preference by reason of the less rapid transition to higher or lower latitudes, with auxiliary steam power to carry them across calm belts, drive a ventilating fan, operate a dynamo for electric light, and furnish steam for artificial heat and other necessary purposes—vessels provided with every needful convenience, with skilled medical attendance and nurses, and with fresh food, fresh milk, and fresh fruits—no longer problems since the day of refrigerating chambers, milch cows, and live stock. Thirty years ago the harbors of China and Manila, Rio de Janeiro and Valparaiso were crowded with splendid American clippers, whose commanding officers were veritable princes of the sea, and whose elegantly appointed apartments were capacious enough, after housing their families and guests, to allow a spare stateroom or more for some invalid stranger; but to-day one looks in vain among the great distant seaports of the world for the ensign of an American merchantman, so that there is little opportunity from this country to make long sea-voyages, save for those wealthy enough to own pleasure yachts which can answer the double purpose of sight-seeing and health-seeking. The carrying trade between Great Britain and Australia, however, requires clipper-built merchantmen of the largest class, whose cabins are nowadays arranged with the very object of accommodating invalids, who have so increased in number that it has been proposed to construct a class of *invalid ships* for their exclusive use; but there is the same objection to congregating large numbers of sick on board ship as at health-resorts or in hospitals, so that if large, well-ventilated staterooms, bath-rooms, good food, and other comforts can be obtained on board a vessel where there are few passengers, the results will be better than upon a regular invalid ship, where the very air is heavy with studied silence, and where ever-present precaution reminds the sick man that he is manacled by disease. The spectacle of pallid, helpless men and women at Madeira and Nice and similar health-resorts depresses the well and frightens the ill—as the yellow flag of the quarantined vessel causes all the sick to die and all who can get sick to do so, until every possible victim is reached.

The therapeutic agencies which operate upon the broad ocean—rest, pure air, equable temperature and moisture, and the minimum of disturbing causes, are to be found in almost as great degree on the ocean islets, where the sound of rippling springs, the sight of fresh verdure, and the scent of earth replace the monotony of the horizon-bound disk of water.

These islets are dotted over the sea—numerous in Oceanica, where distance and rare opportunities of communication place them beyond convenient and frequent access—less numerous but easily reached in the Atlantic, where midway between the continents they invite the weary broken-down sufferers in mind and body to find rest and sweet oblivious antidote for all their ills. The Azores, Madeiras, and Canaries are the chief among these "isles of the blest." The former, especially Fayal, about two thousand miles, ordinarily a pleasant fortnight's run from Boston, offer a climate so mild, that one need hardly look for a better, were it not that that better is to be found at Madeira, and a best of all at Orotava on the Island of Teneriffe, one of the group of the Canaries—*Las Canarias* of the Spanish, the *Insulæ Fortunatæ* of Roman geographers, whose mountain peaks stand above the waters like tombstones in this ocean cemetery, where a continent and its millions of Atlantean inhabitants are buried.

The Madeiras are but five hundred miles from the Azores, and the Canaries two hundred farther south, so that the way is easy to that delightful spot, which Humboldt thanked God he had lived to behold—the valley of Orotava, fit garden of another Eden, where he who would begin life anew may find everything save the vice and artificialities and malefic agencies of modern civilization. Twenty years ago I wrote of this spot, what twenty years later I reiterate:

"Here, if anywhere, reigns perpetual spring, without fogs and frosts, where the sap never dies, where rain seldom falls, winds and storm are scarcely known, and burning heat is never felt. Shut off by the high central range of mountains from the hot winds of the African coast, it is yet open to the ocean at the north, from which and the eternal snows above, it derives the moisture that secures its equality. The temperature of Orotava never falls below 50° F., nor rises above 82° F., and only attains these extremes on such rare occasions as when the thermometer marks 108° F. or falls below 0° F. at Philadelphia. Its average for a number of years has been 68.5°F., that of Madeira being 66° F.; of Rome, 61° F.; of Nice, 60° F.; of Pau, 56° F.; and of Paris, 51° F.; the first being identical with that of our own delightful autumn days, and that which is the most grateful to the body and most conducive to its well-being. But annual means are unsatisfactory indices; countries very cold in winter and hot in summer exhibiting a temperate mean, and it is, therefore, necessary to consider the distribution of heat in each month of the year. The monthly means at Orotava have been for

January	62.2° F.
February	62.1° F.
March.	64.2° F.

April	64.6° F.
May	69.4° F.
June	73.8° F.
July	76.5° F.
August	73.2° F.
September	71.8° F.
October	69.3° F.
November	68.4° F.
December	68.7° F.

A difference of only 14.4° F. between the hottest and coldest months, while at London this amounts to 26° F.; at Pau, 32.2° F.; Rome, 28.3° F.; Nice, 29° F.; and Madeira, 15.3° F.

"But it is the winter season which most concerns the invalid, and the mean temperature of the five months from November to March, from the fall of the leaves to the opening of the lilies, at Orotava is 64° F.; at Madeira, 61° F.; and at Nice and Rome, 50° F. The February of Orotava is the June of London, the May of Pau, and the April of Rome and Nice and Cannes. Stoves are necessary for comfort in Italy and the South of France; in Orotava they are unknown. Linen garments may be worn the entire year. The Guanches were naked except for the loin cloth, and one can bathe as well on the 31st of January as on the 31st of July, while at Nice even the healthy visitor finds it necessary to stipulate for apartments opening to the south and exposed to the direct rays of the sun. There are no sudden variations of temperature at Orotava. There is a fraction over two degrees per month of gradual elevation from the winter to the summer and a corresponding decrease through the autumn, and even these differences may be almost neutralized by removing one's residence from the Puerto on the seashore in the winter to the Villa, a few hundred feet higher, or to any greater elevation on the slope of the Cañadas during the summer. Moreover, the mean temperature of one day seldom differs from that of the preceding more than a degree. On rising in the morning the invalid may be sure of respiring air of the same warmth as on the foregoing day, while the hourly variations of each day are also inconsiderable, the early hours of the morning differing only 6° to 9° F. (at Madeira the difference is 12° F.), from the heat of mid-day, and the most of this occurs before nine o'clock. At Orotava doors and windows may always remain wide opened, maintaining a perfect equilibrium within and without, the advantage of which cannot be overestimated. Here the invalid may live in the open air—the air of the ocean—which is uncontaminated by the thousand emanations of a large city, his feeble lungs, lightened of most of their labor, mechanically discharging their functions and as much at rest as is possible for organs whose only complete repose is death.

"Nor is temperature the only climatal condition in which Orotava enjoys such sanitary preëminence. In point of humidity and exemption from atmospheric vicissitudes it is unequalled by other localities. It rains but forty-five days in the course of the year. At Madeira the average is seventy-three; in Rome, one hundred and fourteen. The mists which bathe the mountain crests, the streamlets that course down their sides from the line of melting snows, the vapors wafted from the ocean, and, when these are wanting, the gentle rains of the winter, furnish that due proportion of moisture which is most agreeable to man and most favorable to healthy life. There is no warring of the elements at Orotava. The barometer stands almost invariably at 30.12 in., and, according to Belcastel, it did not vary a centimetre (0.39 in.) in six months. From February to November a northeast wind prevails, strongest in March, becoming lighter in the spring, to be all summer and the greater part of the autumn only the breath of a zephyr, setting in regularly about eight o'clock in the morning and moderating the heat of the day. The vapors from the Atlantic are gathered in a thick cloud about half the height of the amphitheatre of the valley, and there held all day, like an immense parasol, intercepting the direct rays of the sun. Days entirely clear are rare, until the gentle rains of the late autumn signalize the disappearance of the clouds and the revival of vegetation. The winter passes without frost, but the white-crowned plateau of the Cañadas, seven thousand feet high, which rims the basin of the valley, and the snow-capped Peak of Teneriffe, towering five thousand feet still higher, denote its presence and add new charms to the landscape. The superiority of Orotava in the matter of hygiene over every other known resort has been set forth by M. Gabriel de Belcastel in his excellent little monograph entitled 'Les Iles Canariennes et la Vallée d'Orotava, sous le point de vue médical et hygiénique,' and his opinion is confirmed by Professor Schacht, of Berlin, in his work on *Madera und Teneriffa*. Madeira approaches it more nearly, as might be expected from its geographical proximity; but the winter of Madeira is unpleasantly chill, its humidity is greater, and the *harmattan* blows upon it from Africa. Nice and Cannes are toyed by the smiling waves of the Mediterranean, but they sleep at the foot of the Alps, and their awakening air has its home in their clouds. Naples is visited by keen north winds, coming after the deceitful caresses of the *sirocco* from the Libyan Desert, and at Rome and Florence the cold is sometimes intense, while they are often deluged by rains."

While it may be insisted that these insular sanitaria are of the earth earthy, however small their extent, their climate, for reasons already stated, is strictly oceanic, since their area is but a speck amid the surrounding waters, so that for therapeutic purposes they may be regarded as big vessels anchored for a time where the salt sea-breeze may have un-

checked sweep across them. The conditions of equability of temperature, moisture, and electric tension, and absence of ochletic poisoning, prevail here even better than on board the ocean steamship, where there is no escape from the greasy smells of the galley and the machinery, the noise of the engine, and the exasperating clatter of crowds of passengers, or on board the sailing vessel, where the contracted stateroom is apt to be befouled by emanations from the bilges.

At Madeira and Orotava the therapeutic agencies are purely climatic. The air, and light, and heat of the sun are the revivifiers. No drug lends its potency to nature's means. The vicious microbe dies for want of food. If medicinal agencies be needed, as for the rheumatic, venereal, gouty, or dermatosic sufferer, these may be found on the island of Sao Miguel, the largest of the Azores, where intensely cold and boiling waters issue, side by side, from the earth and mingle their tides, sulphurous vapors floating continually from the mouths of the hot wells and from the not inaptly termed *Boca d' Inferno* (mouth of hell), or mud crater, which tosses the semi-solid contents, that seldom overflow, about a circle of forty-five feet diameter. Here there are sulphur and saline springs in a benign climate, where the skin may be kept soft and clean, the emunctories active, the lungs filled with pure air, and the stomach with wholesome food, and if meddlesome man will leave the stopples in his vials, the road to health may be regained all the more quickly. An old friend, himself a physician, who had gone to a famous spring because, like the bewailing Psalmist, there was no health in his flesh nor any rest in his bones, and, perhaps for the same reason, complained to me that he was not allowed to depend solely upon the column of variegated salts and alkalies, which the analysts had strung out to five and six decimal places, but the resident professional brethren insisted upon supplementing a substantial dosage of iodides and bromides that put to shame nature's own infinitesimals.

So, wise in our own conceit, we stand with minim-glass and milligramme, and measure and weigh with dosimetric nicety what perchance nature only disdainfully rejects through her waste chutes—*per vias naturales*. Is it not time to stop and ask ourselves whether it be not the better part to place our patients where, amid Heaven's boundless supplies, the wiser air-cells, and bloodvessels, and lymphatics may themselves select just what they most require—where pure air and water, and good food, cooked to tempt the palate with half the art in making pretty potions to please both eye and taste, shall be the tonics to regenerate the blood till it revivify the worn-out nerves, repair the wasted tissue, and set once more in healthy play the vital machinery which animates and gives the body being? Mere drugs cannot do this, and drugs needlessly, excessively, wrongfully administered, can only retard it. The pharmacist may oftentime be idle, but the therapeutist's task will be no lighter, for climato-therapy requires sound judgment, wise and discriminating adaptation of natural agencies, and the same watchful observation of the grade of action shown by the pulse, the condition of the organic fibre, and the state of the secretions, which are the sum of the physician's duty, however huge his pharmacopœia. If he can preserve tissue from destructive change, keep the emunctories in active play, and control the pulse's fitful beat, he may patiently bide his time for those forces to exert their power, which out of the germinal vesicle make the perfected man — out of the stomach's bole, the blood's living corpuscles, and out of these the sentient flesh and conscious brain. Only the sciolist makes pretence to cure. At our best we are but care-takers. Like children playing with building-blocks, we can pile together a few elements into semblance of organic compounds, but the sublime mystery of the living cell defies us. When we can recognize just where the departure from normal cell-life begins, and shall have learned how to control the process of assimilation, we shall have conquered disease and put under subjection all but the last enemy—*death*.

THE INFLUENCE OF AN OCEAN ATMOSPHERE ON A STAID POPULATION, WITH SPECIAL REFERENCE TO PULMONARY CONSUMPTION.[1]

By A. N. BELL, M.D.,
of Brooklyn.

It is a common criticism on the vital statistics of seamen with reference to the salutary influence of an ocean atmosphere, as related to pulmonary diseases, that the subjects are always more or less selected by special examination, as in the recruiting service of the navy; or by the limitations of age, in the merchant service. The object of this note is to rebut that criticism by the vital statistics of a staid population of all ages, dwelling under the influence of what may be considered an intensified ocean atmosphere—the trade winds of the tropics, and almost at the level of the sea.

The population selected is that of Turk's and Caicos Islands, comprising an area of one hundred and sixty-nine square miles, situated between 21° and 22° north latitude and 71° and 72° 30′ west longitude. The greatest altitude is an unoccupied bluff of less than one hundred feet; a considerable portion of the shore is water-logged and swampy; little or no attention is paid to drainage; vegetation

[1] Read before the American Climatological Association, June 24, 1889.

is scant; the dwellings are, for the most part, frail structures, almost wholly devoid of sanitary conveniences; there are no sanitary requirements; the whole people seem content to depend upon the forcible atmosphere and abundance of sunshine, for both health and the means of livelihood—the dissipation of foul emanations from the soil, and water from the salt-basins.

The following is an abstract of a copy of official records:

For the ten years 1877 to 1886 the average population of Turk's and Caicos Islands has been 4732; of this number Grand Turk, the only village, extending about two miles along the shore of Turk's Island, contains about 2000. The average temperature for the period has been 83° F. Range of temperature, 75° to 90°. Strong trade winds from east-north-east to east-south-east throughout the year. The weather is never hot at night, except on very rare occasions, when the wind subsides for brief periods. Rainy weather is almost exclusively confined to March and September.

The registration of deaths for the ten years is as follows:

record was copied, and as his early return, by the way of New York, was at the time expected, it was awaited, with a view to obtaining the needful detail. He arrived, as expected, but, unfortunately, not feeling well enough to give the subject immediate attention, was soon after taken sick and died of pneumonia.

Notwithstanding, the inquiry has been pursued and the record closely scrutinized by an intelligent observer conversant with it. Mr. Joseph Hutchings, editor and proprietor of the only newspaper published in the islands, writes:

"I have lived in Grand Turk thirty-four years. I think it is one of the healthiest places on the face of the earth. There are over 2000 Turk's Islanders in the different ports of San Domingo, within seventy miles, and two-thirds of the adult deaths are from diseases contracted there, whence they come to their relations to die. I knew every one who died in Grand Turk during the ten years, and, in looking through the records, I am satisfied that the number from pulmonary consumption does not exceed three or four yearly."

By reference to the table it will be observed that the number of deaths from pulmonary diseases of all kinds during the ten years was 155. If the larger number given by Mr. Hutchings, 4, annually,

DEATHS REGISTERED IN TURK'S AND CAICOS ISLANDS DURING THE TEN YEARS 1877–1886.

Diseases.	1877.		1878.		1879.		1880.		1881.		1882		1883.		1884.		1885		1886.		Total.
	Turk's.	Caicos.	Turk's.	Caicos.	Turk's.	Caicos.	Turk's.	Caicos.	Turk's.	Caicos.	Turk's.	Caicos.	Turk's.	Caicos.	Turk's.	Caicos.	Turk's.	Caicos.	Turk's.	Caicos.	
Pulmonary	11	14	6	3	5	5	7	8	10	8	7	6	12	8	9	5	12	4	10	5	155
Intestinal	6	1	7	1	1	4	3	9	9	6	6	5	8	4	5	9	8	3	7	9	111
Throat	1	...	1	...	...	1	...	2	...	1	2	1	...	...	...	...	...	2	1	1	13
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Urinary organs	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	1	...	...	5
Smallpox	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Dropsy	1	...	...	...	2	...	1	1	1	1	5	3	2	1	2	...	2	1	...	...	23
Leprosy	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	3
Senile decay	2	3	3	6	9	4	17	13	12	7	13	8	10	4	10	8	10	9	11	6	165
Infants, under 3 years	29	18	13	23	16	18	23	22	15	9	20	9	9	17	18	15	17	13	15	8	327
Fits	2	...	...	1	...	1	1	...	...	...	...	...	1	...	...	...	...	1	1	1	9
Heart	...	...	...	...	2	...	1	...	...	1	...	...	...	1	...	...	...	...	1	...	6
Liver	1	...	...	...	...	...	...	...	...	...	1	...	1	...	2	...	...	...	...	...	5
Scrofulous	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	2
Cancerous	1	2	...	...	1	...	...	1	...	1	1	...	...	...	1	...	2	1	...	...	11
Spinal	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	2
Fever	4	9	...	3	...	6	7	5	6	10	4	10	4	9	3	3	3	8	3	2	99
Paralysis	1	...	1	...	1	...	2	...	...	...	2	1	...	1	...	...	1	...	2	...	12
Rheumatism	...	...	2	...	..	...	...	1	...	1	...	1	...	2	...	...	...	1	...	1	9
Asthma	1	1	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	1	1	1	8
Palsy	...	...	...	1	...	...	...	1	...	1	1	1	...	...	...	...	1	...	...	...	6
Accident	...	1	1	3	2	...	3	2	5	4	3	3	2	1	2	8	4	1	3	2	50
Syphilis	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Childbed	...	1	...	...	1.	...	1	...	...	...	1	...	...	...	3	...	1	2	...	1	10
Total	61	50	35	42	39	40	68	66	60	52	66	48	52	49	56	50	61	48	55	37	1035

The imperfections of this table, particularly with reference to pulmonary diseases, all grouped together, have considerably delayed the use of the information—intended at the outset for the meeting of the Association a year ago. But Dr. Daniel Bascome, the only physician of the islands for about thirty years, was on a visit to England at the time the

among the 553 registered in Turk's Island during the ten years be taken as the approximate proportion from pulmonary consumption in the whole population, the ratio from that disease to that of other diseases of the lungs, will be about the same as the proportion observed in these latitudes—one-half; and the ratio of deaths from pulmonary consump-

tion to the deaths from all causes in Turk's and Caicos Islands, about seven per cent.

Moreover, it is interesting to observe, in this connection, that the proportion of deaths from diseases of the lungs to those of other diseases in the village of Grand Turk is, according to the usual wont of such diseases, considerably larger than in the Caicos—the scattered population.

Of deaths from fevers, on the other hand, the proportion in the scattered population is almost twice as large as that in the village; and Mr. Hutchings remarks, in regard to their prevalence, "very few originate here, except an occasional case of bilious fever. The Islanders who go to San Domingo contract malaria, which, strange to say, kills the blacks without fail; most of whom are young persons."

Of the large number of accidents recorded, the most prevalent is drowning—15 of the 50 registered.

"Eye diseases" are remarked upon as being especially prevalent.

Of the large number of deaths registered "senile decay," more than one-sixth of the total number of deaths, the ages at death range from 65 to 103 years, and average about 74.

Of the deaths registered from infantile diseases, under three years of age, and thirty per cent. of them under three weeks, the number is not quite twice as large as that from senile decay. Measles, whooping-cough, and thrush are the alleged chief causes.

"Throat diseases," from which thirteen deaths are registered, include bronchitis and, in the Caicos, ulcerated throat. There is no record of diphtheria.

For the rest, the table is sufficiently explicit.

On the whole, it may be remarked, the population of these islands is a staid one to an extraordinary degree and exclusive.

The place has but few visitors, and those for short periods; the sickness and death-rates are not swelled by strangers. On the other hand, these people are generally poor. They rarely leave their homes except from necessity—in search of work—and then as before stated, they visit the less healthful place, San Domingo, where they contract fever. Their occupations and regimen are alike unfavorable to strength of constitution and protection against pulmonary consumption. Yet they are exempt to an extraordinary degree, and the exemption appears to be wholly dependent upon the climatic conditions to which they are exposed.

Cremation in France.—The Municipal Council of Paris has appropriated 383,299 francs for the erection of a crematory in that city, and has levied a "cremation tax" to defray the expenses of the incineration of the bodies of those whose friends cannot afford to pay for it.

PROLAPSE OF THE WOMB, WITH ESPECIAL REFERENCE TO THE (SO-CALLED) HYPERTROPHIC ELONGATION OF THE SUPRA-VAGINAL PORTION OF THE CERVIX, WITH REPORT OF A CASE.

By LEWIS H. ADLER, Jr., M.D.,
LATE RESIDENT PHYSICIAN UNIVERSITY HOSPITAL, PHILADELPHIA, PA.

Prolapse of the womb may occur in three distinct ways: (*a*) Simple descent. (*b*) Descent from hypertrophic elongation of the infra-vaginal portion of the cervix. (*c*) Descent from hypertrophic elongation of the supra-vaginal portion of the cervix. Without a knowledge of all the kinds of prolapsus, a differential diagnosis of any one of these conditions would be impossible. Therefore, a brief description of each of the above forms may not prove uninteresting.

Simple prolapse, or, as Dr. William Goodell aptly calls it, "substantial descent of the womb," is a sagging down of the uterus as a whole, together with its appendages. The degree of displacement depends upon the weight of the organ and the amount of relaxation of its supports, ligaments, etc. It may be *partial* or *complete*—that is to say, the womb may be either within the vagina, or wholly or in part outside the vulva; in the one case constituting the *prolapsus uteri* of writers, in the other the condition called *procidentia uteri*. These terms are so often used interchangeably that it is best to avoid them and to use the descriptive terms of complete and incomplete prolapse.

The causes, both predisposing and exciting, are the same in each of these divisions of simple prolapse, the difference between them being one solely of degree and not of kind. We may, therefore, study them together.

Advanced age, laborious occupation, habitual constipation, and childbearing, predispose this condition, whilst any cause which tends to increase the weight of the organ or to weaken its support will also prove an exciting factor.

The symptoms occurring in this prolapse are manifestly present either in a greater or less degree in the other two, and may be considered better in that form of prolapsus which this paper is meant particularly to describe.

The treatment consists in replacing the organ into its normal position and in sustaining it in the same by means of supports, in the shape of the various forms of pessaries in the market, which must be adapted to the needs of each particular case. The bowels should be carefully regulated, all heavy work and straining at stool avoided, astringent vaginal injections may be used with advantage, and rest in bed is often productive of good. Any complication which may exist, such as inflammation, ulceration, or hypertrophy must receive attention.

If the primary cause of the prolapse can be ascertained and remedied, the secondary results of the same can be the more successfully combated.

The general health must be improved. Tonics, such as strychnine, iron, and quinine should be given. Ergot is often useful. Sea-bathing is advised by many.

Where the above treatment fails, surgical procedures must be tried as a final resort.

Rupture of the perineum during parturition being a frequent starting-point in the production of prolapse of the uterus, it is essential to remedy this defect whenever found to exist. Numerous operations, having for their object the narrowing or constriction of the vaginal canal, have been resorted to by various operators, such as Sims, Emmet, Schröder, and Hegar.

Sims removes a V-shaped portion of the anterior wall of the vagina by means of curved scissors, and then brings the edges together by means of silver wire sutures. The cervix is meant to fit into the pouch thus formed.

Emmet closes the pouch by running a denuded strip, as a base to the triangle, across in front of the cervix uteri. Appreciating the difficulties involved in the execution of this operation, he has since simplified it by denuding two surfaces, about half an inch square, on either side of the cervix, and a little behind the line of its anterior lip, then removing a strip from the vaginal surface in front of the uterus, about one inch long by half an inch wide, and bringing together these three points, with the effect of forming a fold in front of the cervix. Silver wire sutures are used in this operation, four or five to the inch. Schröder freshens an oval portion and secures adhesions by alternately deep and superficial sutures.

Hegar narrows the vagina by the removal of a V-shaped piece of mucous membrane from the posterior vaginal wall, the apex being carried up nearly to the cervix, the base ending at the vulva, which it includes.

The best of these operations is considered to be that of Emmet's, if there is no evident rectocele, or that of Hegar's if there is one, particularly if it drags upon the uterus.

Prolapse of the womb from hypertrophic elongation of the infra-vaginal portion of the cervix presents an entirely different condition of affairs from that we have just been discussing. It is the result of a hypernutrition of the part (Goodell). Emmet doubts the existence of such a lesion unless it be the result of a laceration of the uterine neck and os. That it exists, however, without this lesion as a productive factor, other competent judges bear testimony, amongst whom I might mention Dr. Goodell,[1] of this city, and Dr. A. W. Edis,[1] of London. The body of the uterus in this condition occupies its normal position, but the elongated cervix projects into, and occasionally fills to a great extent the whole length of the vagina, the os externum projecting at, or even beyond, the vaginal outlet. This latter condition is, as a rule, either congenital or an exaggeration of a congenital condition, and is therefore found in multiparæ (Goodell).

Hypertrophic elongation of this portion of the cervix may arise in consequence of the process of involution not taking place properly; from the stretching of the uterus when adherent to an extra-uterine cyst (Edis); the presence of fibroid tumors dragging up the uterus as they grow above the pelvic brim, etc.

The treatment in these cases is essentially operative and will be treated of in the next and last form of prolapse to which the womb is subject, viz. (the so-called)

Prolapse of the womb from hypertrophic elongation of the supra-vaginal portion of the cervix. That this form of prolapse exists is doubted by many; yet it is admitted by the majority that a change of some sort does occur in the *supra-vaginal portion of the womb*, which is supposed to be an instance of elongated cervix, but in reality *is not in the cervix proper* but in the tissues of the body of the uterus. Emmet[2] goes so far as to say that instead of there being an enlargement of the cervix, actual atrophy of the same is the rule.

Let us at this point illustrate our further remarks by a case admitted into the University Hospital in the gynecological wards of Professor Goodell, January 4th of this year.

Mrs. E. G., aged forty-six years, a German. Always was healthy. Married in 1862. Menstrual periods had been regular since the age of fourteen, when they first started. Has had two children; the first was born March 14, 1863, the second, January 30, 1865; never had any miscarriages.

The trouble for which she sought help in the hospital came on after the birth of the second and last child; when, as she describes it, the womb descended until it gradually appeared outside of the body. This labor was a tedious one, owing to the early rupture of the waters and the large size of the child. It resulted in a slight tear of the perineum. She never felt like herself after this confinement. Suffered more or less from leucorrhœa, constant bearing-down feelings, a weakness in her back and loins, and other uterine symptoms, which she attributed to getting up and working too soon. Her housework, which she had formerly done, she now found impossible to continue.

Some years ago, as near as she can remember, a

[1] Lessons in Gynecology, 3d ed., p. 212.

[1] Diseases of Women, including their Pathology, Causation, Symptoms, Diagnosis, and Treatment, 2d ed., p. 277.

[2] Emmet's Principles and Practice of Gynecology, 2d ed., p. 485.

tumor began to protrude more and more from the vulva, which was preceded by painful micturition, so intense at times that the mere thought of emptying her bladder drove her wild with fear. Her physician, who was now consulted, replaced the tumor and advised an operation; but as she would not entertain the thought, he applied measures which temporarily lessened her suffering.

This state of affairs continued until the time when she made up her mind, at her physician's earnest solicitation, to seek relief by operation at the hospital.

Upon examination on admission, her condition was found to be a pitiable one. In walking she was obliged to straddle—wabble along as it were. The tumor, which at first was easily reducible, and without pain, now caused her intense suffering if only touched. Micturition and defecation were both exceedingly difficult and painful; the former especially so. The urine was constantly dribbling away, and had excoriated the skin so much that it of itself was enough to make life miserable.

The vaginal examination revealed a boggy tumor protruding from the vulva, which was evidently the infra-vaginal portion of the cervix, clubbed, and apparently much thicker than normal, but not elongated. Professor Goodell's son, Dr. W. C. Goodell, made the first examination, and succeeded in passing into the bladder, not, however, without eliciting a cry of pain from the patient, a uterine sound, the point of which could readily be felt about three-quarters of an inch from the apex of the prolapsed tumor; demonstrating clearly the presence of a cystocele. A rectocele was also found. The question now arose as to what this tumor was. That it was a prolapsus of the womb was certain—palpation and inspection clearly showing that. But which of the three forms could it be? This could not be ascertained without measuring the uterine canal, which was now done, showing a length of near six inches. Certainly it could not be an inverted uterus or a simple descent. In the one case, there would have been no uterine cavity; and, in the other, the sound could not have shown the fundus to be high up in the pelvis and a uterine canal of over five inches. If it were a simple elongation of the vaginal cervix, it, and it alone, would have composed the tumor, and it could not have pushed forward and been hidden behind a covering of the vagina, as was the case in the history just recorded. Thus by exclusion, as well as by direct evidence, the tumor was proven to be in the main composed of the so-called prolapse of the womb from hypertrophic elongation of the supra-vaginal portion of the cervix.

On the 7th of January the woman was prepared for the operation of amputation of the vaginal portion of the cervix by Hegar's method. Whilst the patient was being etherized, Professor Goodell explained to the students of the ward class present, the ways in which the removal of an infra-vaginal portion of the cervix caused a so-called supra-vaginal elongated portion of the uterus. He said it did good and promoted a cure: (1) By the hemorrhage occurring during the operation, which, depleting the womb, caused shrinkage; (2) the suppuration necessary for the repair of the womb aided in establishing a retrogressive metamorphosis, not only of the womb and its thickened mucous investment, but also of the relaxed and subinvoluted vagina, by means of which renewed strength and tonicity were given to the parts; and, lastly, that the rest in bed and the lessened weight of the cervix tended to promote a restoration of the parts to their normal condition. The patient, now fully under the influence of the anæsthetic, was placed upon the table in the lithotomy position, on the left side, a Sims's speculum was introduced and given to an assistant to hold. The womb was brought fully into view and a sound, well curved, was passed into the bladder to determine its situation in reference to the tumor. The cervix was now transfixed, as high up as possible, with a long, straight skewer, and another one was placed at right angles to it. Behind these an elastic noose of rubber tubing was tied to control the hemorrhage, after which, the redundant portion of the cervix was removed in a cone-shaped piece. Stitches of silver wire were now used, extending from the os uteri, as a centre or hub, to the outer portion of the cervix, the stitches resembling the spokes of a wheel. The sutures numbered eighteen, each of which was clamped by a perforated shot, as in the operation of lacerated cervix uteri.[1]

The patient fully recovered from the operation without any untoward symptoms. A slight rise in temperature was noted for several days afterward, but it soon returned to normal. As a matter of course, the subsequent discharge was profuse and somewhat offensive. The stitches were left in for a long time in order to promote as far as possible the retrograde change. In this case, the operation did not produce a perfect cure, and when the patient was discharged on the 26th of February, much improved in health, and with a womb measuring only three inches in depth, she was advised to come back later and have performed Alexander's operation of shortening the round ligaments.

Having thus proven that there is a condition of prolapse of the womb which at least resembles a hypertrophic elongation of the supra-vaginal portion of the cervix, we may with advantage ascertain, if possible, the true state of affairs regarding the two points of dispute, viz.: Is this condition a true hypertrophy, and does the change which we know occurs (whatever its nature may be), affect the supra-vaginal portion of the cervix?

In reference to the first question—*Is this condition a true hypertrophy?*—I think I can clearly show that it must be answered in the negative. True hypertrophy implies a change of structure incapable of speedy resolution, which is not the case in the so-called hypertrophied elongation under discussion, for there the reduction in length is remarkably rapid when once commenced.

Again, if this were a true hypertropy, would the

[1] See "Lacerated Cervix Uteri as Treated at the University Hospital, by Professor William Goodell," in the N. Y. Medical Journal, March 2, 1889.

line of demarcation between the affected supra- and the infra-vaginal portions of the cervix be as plainly marked, separated as it is, in theory only, by the vaginal wall? Most certainly not; for are they not two portions of one continuous structure?

Professor Goodell puts the question even more tersely when he says:

"Is it reasonable to suppose that a merely superficial muscular collar, such as the vaginal attachment, can act like a conjurer's ring, and, by a sort of magic, forbid deeply seated tissue-changes on one side of it from passing through to the other? Rather than be embarrassed by this difficulty," he says, "I much prefer to apply the aphorism of the schoolmen: *quod non habet, dare non potest*—a cause cannot communicate what it does not itself possess."

And he therefore concludes,

"that the elongation, if supra-vaginal, is not communicable, because it is not essentially hypertrophic."

He uses the term *essentially*, because he says:

"I am willing to concede some degree of growth, not primary, but secondary, caused by the irritation of another factor—traction—and by the stasis in the circulation induced by it."

Having thus, I hope, satisfactorily proven the fallacy of an affirmative reply to the first question, let me briefly consider the second and less important one, but one harder to comprehend—*Does the change affect the supra-vaginal portion of the cervix?* To understand clearly this phase of the subject, allow me for a few moments to digress, in order to speak of the changes which occur in the structure of the cervix during both *menstruation* and *gestation*. In the former condition, according to the observations of J. Williams,[1] it appears that at each successive recurrence of *menstruation* a complete removal of the glandular part of the mucous membrane takes place by a process of softening and molecular disintegration which commences *close to, but not in the cervix*, or, at the os internum, and advances progressively toward the fundus during the remaining days of the flow of blood. This fact is of importance, as we shall see presently. In *gestation* the alterations are, of course, more extensive. Here the size, shape, and the position of the uterus, the form and dimensions of its cavity, and the character of its cervix are changed. It is with the latter portion that we have to do. During pregnancy the cervix loses its columns and rugæ; after parturition the enlarged muscular fibres of the uterus undergo a fatty degeneration; but the cervix is affected least by this change, owing to its firmer structure and the difference between the mucous membrane lining it and the cavity of the body of the uterus, between which a marked line of distinction exists, separating the two parts at the isthmus.

[1] Quain's Anatomy, vol. ii. p. 468.

Upon these facts hinges the theory of Dr. Isaac E. Taylor, to whom the profession is indebted for first calling attention to the stability of the cervix uteri,[1] which I have shown is not effaced by gestation or by parturition; nor does the molecular change which periodically occurs in the body of the uterus affect the membrane lining the cervix, but stops short at the line of demarcation between the two separate membranes lining the uterus, as alluded to above.

I quote from Prof. Goodell's book the conclusions which he draws from Dr. Taylor's investigations. He says:

"Dr. Taylor's testimony regarding the autopsic lesions of this disease shows conclusively, if I understood him correctly, that the elongation does not affect the glandular portion of the cervix, but that portion of the womb just above the os internum, at the junction of the body with the neck. In other words, it is the supra-glandular portion of the cervix—the isthmus—which is drawn out from the corpus, and at the expense of its thickness."

Granting that the above conclusions are simply theoretical, do not the anatomical and physiological facts amply bear out the deductions? I think they do most conclusively; and whilst admitting the possibility of a hypertrophy of the supra-vaginal portion of the cervix (not primary), I think the weight of evidence proves that the condition so often recognized by the name of hypertrophic elongation of the supra-vaginal portion of the cervix, is no more or less than a simple elongation or stretching of the body of the uterus just above and including the isthmus, when in the non-involuted womb the tissues are thick, soft, and ductile.[2]

41 NORTH TWELFTH STREET.

MEDICAL PROGRESS.

Treatment of Chronic Urethritis.—In a lecture on the treatment of chronic urethritis, delivered before the Royal College of Surgeons of England by MATTHEW BERKELEY HILL, the lecturer spoke of the results obtained by the use of soluble bougies containing various drugs in amalgamation: Fifty patients had been treated with this remedy, the average number being twelve per patient, although in one case forty-eight bougies were employed. In ten a cure was effected, two were treated by rhatany; one by sulphate of zinc and belladonna; four by chloride of zinc and belladonna; and three by chloride of zinc alone.

Thallin.—Thallin, as prepared in Christy's bougies, was tried in nine cases, with the following result: None were cured, four were made worse, one was slightly benefited, and four were not improved.

Iodoform.—Iodoform bougies were not used in any

[1] Goodell's Lessons in Gynecology, 3d edition, p. 224.

[2] For a most interesting report of a case of prolapse of the uterus and bladder of fifteen years' standing, from which thirty vesical calculi were removed, see N. Y. Medical Journal, vol. xlvi. p. 737.

cases, as they are useless in chronic urethritis, and of little service in acute urethritis.

Permanganate of Zinc.—Permanganate of zinc has been used by the lecturer for several years; it was first recommended to him by Dr. Alder Smith, of Christ's Hospital; he prescribes it in all cases of urethritis, most frequently in the acute form. Notes of its use were taken in seventy cases. Ten were cured by it; in fifty-four it very greatly diminished the discharge; in four it did no good, and in two it made the discharge worse. Its use was particularly marked by the absence of any irritation. It should not be used in strong solution, one grain in eight ounces of distilled water, and should not be prescribed in conjunction with vegetable extracts, as an almost explosive mixture is thereby produced.

Sulphates.—The sulphates of zinc, alumina, copper, and iron are most efficacious in the later stages of gleet. They appear to be easily absorbed, and penetrate deeply into the inflamed tissue. The alumina and zinc salts appear to combine with the discharge without penetrating deeply in the mucous tissue. Sulphate of copper, on the other hand, penetrates deeper, and must not be used in a strong solution, as it causes slough, which leaves a scar behind it. These notes were taken by observations through the endoscope. Sulphate of iron is of no great value but usefully affects the three preceding drugs. Twenty-five cases were treated with the four sulphates, in eight it was the third remedy employed, with four cures and four improvements. Used as the first remedy it cured twice and improved twice. The rest of the twenty-five it either cured or improved, with one exception. In that no improvement was marked. The strength of the solution as commonly used is:

Sulphate of zinc . . .	30 to 40 grains.
Alum	30 to 40 "
Sulphate of iron	20 "
Sulphate of copper . .	2 "
Water	8 ounces.

Nitrates.—In using solution of nitrate of silver, small instillations are made on the points of the disease previously ascertained. The strength of the solution is from five to twenty-five grains—five to ten minims is the quantity injected. The irritation caused by this injection is unimportant. The effect passes off in a day or two, and must be repeated every third or fourth day until the granular patches no longer exist. Where induration of the submucous tissue exists as well as granular patches, these unyielding parts are stretched in the passing of the bougie before the instillation of the nitrate of silver. The nitrate of bismuth has but a restricted value as an astringent. In some cases it does good, in others none.

Chloride of Zinc.—For the value of chloride of zinc as an injection, forty-three cases were analyzed. In seventeen of the forty-three discharge ceased after its use, in nine others it diminished.

Belladonna, Opium, Cocaine.—Extract of belladonna and extract of opium, long used by the lecturer as sedatives, appear to have but small influence in that direction. Cocaine in five per cent. solution applied before the injection is thrown in, is a very efficient anæsthetic when much pain is caused by the injection. Parenthetically it was remarked that during the acute stages of gonorrhœa, when scalding is severe, the injection of ten per cent. solution of cocaine into the urethra entirely prevents the scalding pain of micturition.—*British Medical Journal*, June 29, 1889.

Treatment of Herpetic Conjunctivitis.—In cases of herpetic conjunctivitis occurring in children, the following instillation will, according to Dr. Saint-Germain, in *L'Union Médicale*, June 13th, be found most valuable. Under its use the pain quickly subsides.

℞.—Borate of soda	grs. ijss.
Sydenham's laudanum . .	gtts. v.
Distilled water	f ℥j.—M.

Cactus Grandiflorus in Cardiac Affections.—According to the *Rev. de Thér. Méd. Chir.* of June 15th, Dr. Gregory has used the cactus grandiflorus in functional valvular disturbances with great success and considers it of far greater value than digitalis in such cases. Further, he has also found it most efficacious in cardiac innervation, in strengthening weak, irregular, and tumultuous hearts, especially in cases where the patient is nervously depressed.

Gregory claims that it is an invaluable cardiac tonic, its continued use giving tone and strength to the organ. It has no injurious effect upon the digestive system, and even when used for a long period was well borne by the most delicate stomachs.

Sozoiodolates in Diseases of the Throat and Nose.—The Swiss correspondent of the *British Medical Journal*, July 6th, states the experiences of Professor Hermann Suchannek, of Zurich, with the sozoiodolates of potassium, sodium, zinc, and mercury in nasal and laryngeal disease. His observations agree with those of Fritzsche and Seifert in being very favorable to the new drugs; in particular, the writer found that sozoiodolate of potassium, in the form of powder, mixed with talc (1 to 1 or 2), is a valuable nasal insufflation in cases of chronic mucopurulent, purulent, and serous rhinitis with profuse discharge, while the sodic salt is especially useful in tuberculous or lupoid affections of the nose, fauces, and larynx. Sozoiodolate of zinc, mixed with talc in the proportion of 1 to from 12.5 to 7.5, is said to be an active stimulant of the nasal glands, and hence proves of great service in chronic hypertrophic rhinitis associated with scanty secretion and swelling of the lower turbinated bodies, as well as in cases of senile atrophy of the nasal mucous membrane, in scrofulous rhinitis, and in genuine atrophic and syphilitic ozœna. One or two applications of the zinc compound, after the local use of cocaine, often cut short attacks of acute coryza. Further, the zinc salt considerably diminishes the dryness and other unpleasant subjective symptoms in patients suffering from pharyngitis sicca. Sozoiodolate of mercury, mixed with talc in the proportion of 1 to 20 or 10, and applied by means of a brush or cotton-wool, may be recommended in syphilitic ulcers of the nasopharynx.

Treatment of Hiccough.—Dr. John I. Brinkerhoff, of Auburn, N. Y., writes to the *New York Medical Journal* of July 6th, that he has found calamus a remedy for hiccough in every case in which he has used it, including some cases of an aggravated character. A

very small quantity suffices, only enough to reach the throat when dissolved by the saliva.

Formulæ for Cornutin.—Cornutin, the new uterine hæmostatic, may be given either by the mouth or hypodermically. The following formulæ are recommended by the *Journal de Médecine de Paris*, June 16:

I. For hypodermic injection.

℞.—Cornutin . . . . . gr. ¼.
Distilled water . . . . fʒijss.
Hydrochloric acid . . . gtts. jv.—M.

Sig. One syringeful for an injection.

II. In pill form.

℞.—Cornutin . . . . . grs. 1¼.
Gum arabic paste . . . ʒj.—M.

Make into twenty pills. Sig. Two or three at a dose.

New Skin Remedies.—SCHWIMMER has lately, in the *Wiener medizinische Wochenschrift*, published the results he has obtained in certain skin diseases by the use of salol, oxynaphthoic acid, salicylate of mercury, and anthrarobin. Salol mixed with starch in the proportion of two to one he finds a very effective remedy in all forms of venereal sores and in the buboes resulting from them. Iodoform seems to have a more rapid action, but salol has the superiority of possessing no smell. The drug also appears useful in conditions of the mucous membrane of the bladder, when given internally in doses of forty-five to ninety grains distributed through the day. Oxynaphthoic acid did not give good results in venereal cases, acting as an irritant. In scabies, however, it did not irritate, and was an effective remedy. It may be mixed with chalk and soft soap, each ten per cent., with lard. It acted well also in the secondary eczema of scabies, and allayed itching in prurigo. Salicylate of mercury possesses no superiority over the ordinary remedies used in gonorrhœa and venereal sores. Given internally in doses of one and a half to two grains, it was an effective antisyphilitic drug, although apt to cause irritation of the intestine and stomatitis. Anthrarobin was found to have no beneficial effect in psoriasis, but in herpes tonsurans, eczema marginatum, and pityriasis versicolor it acted well, being mixed with collodion in the strength of one to ten.—*British Medical Journal*, June 29, 1889.

To Abort a Felon.—DR. GAUCHER, says the *Therapeutic Analyst*, in writing on the abortive treatment of felon, states that to effect this object it is sufficient to moisten slightly the painful part with a little water, and to pass over this surface a stick of nitrate of silver. In a few hours after the skin becomes black, all pain disappears and the inflammation is arrested. No dressing is required and the black color disappears in six days.

Disinfection of the Hands.—The Paris correspondent of the *British Medical Journal*, of July 6th, writes that DRS. ROUX and REYNÈS have tried the method recommended by Dr. Fürbringer, of Berlin, for disinfecting the subungual portions of the fingers with alcohol at 80° C. After thoroughly washing and brushing their hands and nails with hot soap and water, then with carbolic acid at 10 per 1,000, they scraped the subungual portions with a short, rough, thin wire, previously sterilized. The wire was then placed in gelatine, or in agar-agar. Forty-eight hours afterward the cultivations became liquefied, owing to the numerous colonies they contained. This experiment was repeated twelve times, with similar results. The authors then scraped their nails by a mechanical dry process, and after washing and brushing their hands in hot soap and water they washed and brushed them in alcohol at 80° C. After the alcohol evaporated they again washed and brushed their hands in an antiseptic solution. Out of forty experiments, aseptic results were obtained thirty-three times. Out of eight clinical attempts, these results were obtained four times. The authors conclude that the method is superior to that ordinarily employed, and may be applied with advantage in abdominal surgery and gynecology.

Treatment of Chronic Cystitis.—Chronic cystitis has been treated, with great success, by DR. V. MOSETIG-MOORHOF, of Vienna, with iodoform injections. His method of treatment is as follows:

The bladder having been previously irrigated with moderately hot water, an injection of the following emulsion should be made:

℞.—Iodoform . . . . . 50 parts.
Glycerine . . . . . 40 "
Distilled water . . . . 10 "
Tragacanth gum . . . ¼ part.—M.

Sig.—One tablespoonful to a pint of lukewarm water, well stirred, for one injection. Injections should be made every third day.—*Wiener med. Presse*, No. 29, 1889.

Therapeutic Actions of Hydrastis Canadensis.—The latest investigations concerning the therapeutic actions of hydrastis Canadensis, are probably those of DR. M. HEINRICUS, of Sweden; the results of whose experiments are quoted in the *Fortschritte der Medicin* of June 15th.

The author endeavored to determine accurately, by experiments on animals, the action of the drug upon the heart and respiration, and its contractive powers upon the uterus and vagina. In his experiments he either used injections of the pure drug or else diluted it with equal parts of a weak salt and water solution. The injections were made into the jugular vein, and rabbits the animals used. It became apparent that every injection caused a marked decrease in the pressure of blood, but the pressure is gradually regained although not reaching the previous pressure. If large doses are given the pressure sinks rapidly and soon becomes abnormally low and the animal dies. The pulse will remain frequent for some time and it is not until the blood pressure becomes abnormally low, that it begins to get uneven and slow. Cutting of both vagus nerves does not lessen the cardiac action of the drug. Heinricus concludes that hydrastis Canadensis is an active heart poison. It exerts a paralyzing influence not only upon the nervous centres of the vascular walls but also directly upon the heart. After large injections the respirations cease entirely for about ten seconds, then begin again, at first being very shallow but gradually increasing in depth. Small doses strengthen the respirations. The author failed to observe any contraction of either the uterus or vagina to follow the use of the drug.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 798 SANSOM STREET,
PHILADELPHIA.

SATURDAY, AUGUST 3, 1889.

THE PATHOLOGY OF RELAPSES.

THE rapid advances in medicine so frequently necessitate changes in our previous theories, that they often excite but little notice. Recently our conception of the pathology of relapses, so exactly defined by Gerhardt some fifteen years ago, has been shown to need extension.

Gerhardt restricted the use of the word to those repetitions of a disease occurring after complete subsidence of the first attack but not longer thereafter than the recognized incubation-time of the disease. If the second attack occurred later than this it was thought in all cases to depend upon a new infection from without. The definiteness of this conception brought about its ready acceptance. Recently, however, it has come to be believed that specific microörganisms may remain for a considerable time latent in some portion of the body, and that they may, at a much later time than Gerhardt's definition admits, gain access to the general system and occasion a "relapse" in the true sense of the term. This belief has been the outcome of the finding of specific microörganisms in various lesions, described as sequelæ, a very considerable time after the subsidence of the initial disease. Thus A. Fraenkel obtained active typhoid fever bacilli from the pus of an abdominal abscess five months after the onset of the fever. Similar observations have this year been reported by Ebermaier and Valentini.

In the case of pneumonia parallel observations have been recorded, the specific germs having been found in the lesions of meningitis, otitis, pericarditis, peritonitis, etc., which occurred as sequelæ of pneumonia. To these an interesting case has lately been added by SENATOR (*Berliner klinische Wochenschrift*, 1889, No. 24, p. 536), in which a seventeen-year-old boy, after recovery from an ordinary attack of pneumonia, developed double median otitis, which persisted for nearly three months. During this time, on two occasions, there were attacks of erysipelatous redness of the face, which could only be attributed to infection from the inflamed ears. At the end of the three months symptoms of meningitis developed and the patient passed through a well-marked attack of that malady. During convalescence from this, *pneumonia* supervened and the erysipelatous redness of the face returned. Senator considers it proper to speak of this as a *relapse* of pneumonia, notwithstanding the long interval between the attacks, for he believes that the second attack cannot be attributed to new introduction of the infectious microörganisms from without, but must be supposed to have been set up by specific microörganisms existent during all that time in the aural lesion. That the second attack was not dependent upon any residual pulmonary condition after the first attack, was not thought possible, since the left lung was affected during the first attack, the right afterward.

The importance of cases of this kind, of which so many have recently been brought to light, cannot be overestimated as elucidating the dependence of complications and sequelæ upon the same exciting cause as the initial disease. The necessity for modification of our present ideas of the limitations of true relapses is also apparent.

Senator questions whether in another way, also, our conception of a relapse is not too limited. In the consideration of relapses of infectious diseases we rightly attribute greater weight to the exciting cause than to any constitutional or local predisposition which may remain after the first attack. But how are we to regard the repeated attacks of diseases not of infectious nature? Is it proper to speak of a relapse of gout or chorea? *Apropos* of this, not as answering the question, which he admits to be impossible in the present state of our knowledge, but as being a case in point, Senator cites a very curious case of chorea gravidarum, the details of which are given by W. Ruhemann ("Ueber Chorea gravidarum"; Inaug.-Dissert., Berlin, 1889, p. 27). The patient, twenty-five years of age, who had been previously

healthy, developed pronounced chorea, affecting the face and extremities, during the fifth month of her first pregnancy. The attack subsided with the birth of the child at term. A second pregnancy was passed through without disturbance. During the third, however, a return of the chorea occurred, so violent that premature delivery had to be resorted to. In such case should greater weight be laid upon the predisposition to repetition of the disease left from the first attack, or to the supposed exciting cause, pregnancy? It seems to Senator to depend upon the comparative importance attributed to one or the other of these factors, whether such repeated attacks should be spoken of as relapses or not.

Senator leaves the subject in an unsettled condition. The old Gerhardtian idea is shown to be too limited, but as yet it is impossible to propose a thoroughly satisfactory substitute.

PERITYPHLITIS.

IN April, 1887, Dr. T. G. Morton reported a case upon which he had operated for perforative appendicitis. At that time this case was unique in two respects: it represented the first successful result from radical operation and excision of the appendix for perityphlitis, and at the same time presented the first instance of recovery from surgical interference with diffuse purulent peritonitis.

Since the recording of Morton's doubly historical case, successful radical operations for perityphlitic inflammatory affections have, in addition to several others by himself, been reported by Kibler, Dixon, Sands, Nancrede, Brenner, McMurtry, Hoffman, Wylie, Tait, Treves, Burchard, Wiener, Whitman, Hartley, and perhaps one or two others; and surgical interference with all perityphlitic inflammatory processes which have reached the purulent stage is now regarded as an established procedure. Certainly no one would to-day be justified in withholding operation if such condition could be recognized; often, indeed, when its presence could only be suspected.

It is now universally conceded that, practically, all inflammatory disorders of the cæcal region have origin in similar affections of the vermiform appendix; which latter arise, as a rule, from kinking, constriction, or irritative contents of that organ producing surrounding inflammation by contiguity, ulcerative rupture, or continuity. Perforation of the appendix is almost always caused by retention and inspissation of intestinal secretions or excretions in its lumen—very rarely indeed by true foreign bodies, such as date, cherry, or gall stones. These pathological phenomena being conceded, the question naturally arises: Should *all* cases of appendicitis, typhlitis, or perityphlitis (collectively known by the latter term) be operated upon? According to our present knowledge and experience, most assuredly, no; although it is our belief that an appendix which has once behaved treacherously is always after to be regarded as a grave menace and ever-present danger to its possessor, and that a premeditated operation for its removal would in the long run prove vastly more safe than to await the time when, regardless of the surroundings or condition of the patient, surgical interference may have become imperative. Removal of the appendix in an interval between recurring attacks should be attended with but the very slightest risks under experienced hands, but this period should never be awaited in acute cases indicating operation, for the delay to secure the lesser risk of operation would in itself be most dangerous; operation, we believe, is always less dangerous than continuance of the disease.

It is difficult to define just which acute cases come distinctly within and which are without the operative line, but no doubt can at this date assail the general conviction that all cases which have reached a recognizably purulent stage should as quickly as possible be subjected to the knife. General peritonitis arising in a person known to be subject to cæcal trouble, or supervening during a primary attack, would always more than justify instant operation. If the formation of a tumor in the cæcal region is awaited before operating, more often than not the patient will die without being given the benefit of his only chance for recovery. Other symptoms than that of tumor must often be our entire guidance.

Diagnosis is here, as in so many other abdominal affections, the stumbling-block, and in dubious cases more or less chance must direct our efforts until laggard diagnosis can be advanced to the eminent position of operative technique.

So long as the disease is in its early stages and the cæcum maintains its usual anatomical position, operative interference is simplicity itself. Let, however, the suppurative process advance until the general peritoneum and other structures have become involved, or let the cæcum be anomalously situated, and the difficulties which may beset the surgeon are

second to none in the whole range of unfortunate possibilities.

It has been conclusively shown by Treves and others that the cæcum and its appendix are invariably completely enveloped by peritoneum just as are other abdominal viscera, so that any advantages which formerly were thought to be gained by reaching that viscus indirectly cannot now be maintained, and no other than direct abdominal incision can scientifically be employed. According to Morton, the appendix is normally placed immediately beneath a point one and a half inches inside of the right anterior superior iliac spine, and the lateral incision taking this point for its centre (which has been recommended by the same surgeon) has given decidedly best satisfaction and most successful results. It has been found possible to deal with all possible complications through this incision with great facility. A subsequent small median incision may, however, occasionally prove of value for purposes of drainage, but it has been shown time and again to be absolutely impossible to deal with most peri-cæcal affections through a median incision alone.

Access having then been attained to the appendix by the lateral direct incision, that organ should invariably be exsected whether it is or is not the seat of pathological change. No operation can be called complete or radical unless this is done, for the danger of simply opening and draining a perityphlitic abscess is attested by one of Morton's cases where this was done and the case recovered, but only to again come to him several years later in the very jaws of death, with general purulent peritonitis from a second perforation of the appendix. Radical operation was then successfully performed, and the patient effectually relieved from all future danger.

In excising the appendix it has been proved abundantly sufficient simply to ligate its base close to the cæcum, and then cut it off, not attempting the impossible feat of approximating peritoneal coats over the stump, as has been recommended by theoretical writers. No more danger ensues from thus dealing with the appendix than arises from excising Fallopian tubes in the same manner.

Dealt with by early diagnosis and operation, and in conjunction with an active laxative treatment subsequently, the conditions which we have grouped as perityphlitis are so steadily being robbed of their terrors and fatality that we may anticipate shortly to find them ranked amongst those diseases most amenable to treatment and satisfactory in result.

It is, fortunately, a rare occurrence for infectious disease to get a foothold in our asylums, but the Maine institution, at Augusta, has been passing through a troublesome experience with diphtheria. The figures, as given by the *Boston Medical and Surgical Journal*, show that there have been sixty-eight cases and fourteen deaths. The trustees have ordered a thorough investigation and sanitation of the infected premises.

The American Association of Obstetricians and Gynecologists will hold its next annual meeting at the Burnet House, Cincinnati, on September 17, 18, and 19, 1889. No formal invitation will be issued to non-members, but the Association extends a cordial invitation to members of the profession who may feel interested, to attend the meeting and participate in the proceedings. The papers and discussions will embrace subjects pertaining to obstetrics, gynecology, and abdominal surgery.

The fifty-seventh annual meeting of the British Medical Association will be held at Leeds, on August 13th to 16th next, under the Presidency of Mr. C. G. Wheelhouse, of Leeds. The Address in Medicine will be delivered by Dr. J. Hughlings Jackson, that in Surgery by Mr. T. Pridgin Teale, and that in Psychology by Sir J. Crichton Browne.

Papers from this country will be read in the Section of Surgery by Dr. F. N. Otis, of New York, "A *Résumè* of the Experience of Seventeen Years in the Operation of Dilating Urethrotomy;" in the Section of Obstetrics, by Dr. A. W. Johnstone, of Danville, Ky., "On the Mechanics of Puberty;" in the Section of Otology, by Dr. Clarence J. Blake, of Boston; and in the section of Therapeutics, by Samuel E. Solly, of Colorado Springs, "On the Climate of Colorado."

The *British Medical Journal* has scored another deserved advance in its circulation, which it announces to have now reached the very large number of 15,550 copies.

We regret to learn that the *Chicago Medical Journal and Examiner* has suspended publication. The *Journal* was one of our oldest and most esteemed exchanges, and was originally started at Chicago in 1844, by Dr. J. V. Z. Blaney, as the *Illinois Medical and Surgical Journal*. Two years later Dr. S. Brainard and others were added to the editorial staff. In

1858 Drs. N. S. Davis and W. H. Byford became the editors, and its name was changed to the *Chicago Medical Journal*. In 1875 it was consolidated with the *Chicago Medical Examiner*, with Dr. W. H. Byford as editor-in-chief, and later it passed under the editorial control of Dr. Samuel J. Jones.

REVIEWS.

BRIGHT'S DISEASE OF THE KIDNEY. By ALFRED L. LOOMIS, M.D., LL.D., Professor of Pathology and Practice of Medicine, New York University Medical College, etc. Paper, 16mo., pp. 117. Detroit, Michigan: George S. Davis, 1888.

This excellent paper is one of Davis's "Leisure Library," and is much above the average of contributions to that series. The history, the morbid anatomy, and the philosophy of the diseases treated of, are discussed with sufficient detail; the diagnosis is clearly elucidated, and the pages devoted to treatment are eminently practical and trustworthy. The author makes the following division of the subject, which is in accordance with the common practice of clinicians: 1. Acute Bright's Disease. 2. Chronic Bright's Disease, including (1) Parenchymatous Nephritis, (2) Cirrhotic Kidney (Interstitial Nephritis), (3) Amyloid Kidney. While all of Dr. Loomis's views, and especially those with reference to the morbid changes in the heart-muscle most frequently encountered in Bright's diseases, will not meet with universal acquiescence, he leaves the reader in no doubt as to the positiveness with which those views are held, or as to the extensiveness of the data upon which they are based.

SOCIETY PROCEEDINGS.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-fifth Annual Meeting, held at New London, Conn., July 17 and 18, 1889.

(Concluded from page 108.)

WEDNESDAY, JULY 17TH.—AFTERNOON SESSION.

DR. H. KNAPP read a paper on

THE TREATMENT OF CARIES AND NECROSIS OF THE ORBIT.

The upper wall of the orbit is the most frequent seat of disease, and here its consequences are most dangerous. In every case of caries and necrosis of the orbit the condition of the neighboring cavities, and especially of the nose, should be carefully investigated. Foci of suppuration should be freely opened, the cavity thoroughly cleansed, and drainage established. This can be well accomplished by small silver tubes provided with flanges. Rough bone should be scraped away with a sharp spoon. Necrosed portions of bone should be removed as soon as they become loose, or when they can be detached without injury to adjacent tissues. The eyeball should be protected, and if there is insufficient closure of the lids, a plastic operation should not be postponed until the cornea becomes ulcerated from exposure.

DR. H. W. WILLIAMS, of Boston, reported a case of

MULTIPLE CYSTS OF THE IRIS OCCURRING IN BOTH EYES.

The subject was a girl, nine years of age. In the right eye there was a projection resembling a large cyst extending from the upper margin of the pupil. A similar growth projected from the temporal border. At the inner part there were two small pedunculated growths. All were of the color of the iris. In the left eye, two somewhat oval cysts filled the pupillary space. Through the square opening left in each pupil there was a little oblique vision.

DR. T. Y. SUTPHEN related a case of

SARCOMA OF THE OPTIC NERVE.

The patient was ten years of age. The tumor involved the left orbit, and was of two years' duration. It was of a mushroom shape, and sprang from the optic nerve. Its size was six inches by five and one-quarter inches and two inches thick. It was readily removed with curved scissors. As much as possible of the nerve was removed.

DR. GEORGE C. HARLAN, of Philadelphia, related a case of

EXTENSIVE VASCULAR GROWTH IN THE VITREOUS.

The patient, a woman, æt. fifty years, presented herself November 20, 1888, on account of disturbance of vision. Examination of the right eye showed the fundus to be slightly hazy, with small dull white spots about the macula, the remains of old hemorrhages, but no recent exudation. The disk was obscured by a delicate network of vessels. Otherwise there was no opacity. There was no stroma. Up to March 2, 1889, there had been several retinal hemorrhages, but there had been no change in the vascular membrane. Vision had been reduced to $\frac{20}{LXX}$.

DR. O. F. WADSWORTH, of Boston, related two cases of

EXTRACTION FROM THE VITREOUS OF PIECES OF STEEL BY THE MAGNET,

in which the piece of steel was removed by passing an electro-magnet into the vitreous through an opening in the sclera. In the second case, the operation was followed some weeks later by a separation of the retina beginning at a point opposite that at which the puncture was made.

DR. J. O. TANSLEY, of New York, reported a case in which he had performed

CORNEAL TRANSPLANTATION

for opacity of the cornea. At the first operation the opacity was not removed to its full depth, and, although the cornea cleared to a certain extent, the result was not satisfactory. The operation was, therefore, repeated, but without any improvement in vision. In both operations there was primary union of the graft, and in neither was there any inflammatory reaction.

DR. L. WEBSTER FOX, of Philadelphia, had performed the same operation in a case of opacity of the cornea, where the patient could just distinguish light from darkness. The graft healed readily without inflammatory reaction,

and the patient obtained useful vision and could almost count fingers.

Dr. Charles A. Oliver, of Philadelphia, presented

AN ANALYSIS OF SOME OF THE OCULAR SYMPTOMS OBSERVED IN SO-CALLED GENERAL PARESIS.

These observations were made on twenty well-marked cases of general paralysis of the insane. The study was limited to subjects in the so-called second stage of the disease, where the psychical symptoms had become of such a character as to necessitate control, and where motor and sensory derangement had become more or less manifest. Care was taken that each subject was seemingly free from any extraneous general disease or local disorder, and the entire study was limited to the male sex, so as to escape any conflicting and complicating changes that might appear in connection with the many diseases peculiar to the female sex. Thirty observations were made, resulting in the following summary:

1. The sensory changes described, which have been limited to unequal optic nerve degenerations, decrease of retinal circulation, with subnormal direct and excentric vision for both form and color, distinctly show lowered sensory response.

2. The motor symptoms, consisting in unequal and feeble movement of the irides, causing inequality and irregularity of pupillary areas; the peculiar form of ataxic nystagmus; the slight loss of ciliary tone, all express want of proper muscle action—true paresis.

3. The peculiarly local conditions shown in the fundus, such as the pigment massings, the crescents of absorption, the disturbed and granular condition of the choroid, etc., all indicate wear and tear of an abused and irritated organ.

4. Therefore these observations upon the ocular apparatus, which were most probably made during the second stage of the disease known as general paralysis of the insane, show not only local changes, but distinctly demonstrate that the series of sensory motor disturbances found are but the peripheral expressions of one of the many indices of gradual loss of neural strength and power in this disease.

Dr. Sutphen related

A CASE OF DOUBLE PURULENT CHOROIDITIS RESULTING FROM MENINGITIS.

February 23, 1887, was called in consultation to see G. W. B., a robust farmer, aged thirty-nine years. He had always been healthy with the exception of an occasional "bilious headache." Never had had any specific trouble. The history was, that on February 9th he came in at noon perspiring very freely; that evening he suffered with intense headache. The next morning he was apparently well, but at breakfast had a violent chill with aching of the whole body. This was followed by high fever. Leaving the breakfast table was the last that the man remembered for three months. From this time the patient rolled and tossed in bed without decided delirium, but being in a stupid condition and easily restrained. Questions were answered only after frequent repetition and the replies ran into complete incoherence. On the third day of the illness the body became quite rigid, with the head thrown backward. On the fourth day, the left hand and forearm became swollen and the right eye inflamed; the left eye became inflamed on the tenth day. Later the left foot became swollen. The swelling of the hand and foot lasted about a week and then subsided. The fever then became less violent and the general condition improved, but the mental sluggishness remained. There was no paralysis, no convulsion, no vomiting. At the end of the third week he had a slight chill, and another after he was out of bed.

At present the man is apparently in good health. He has lost none of his functions and the mind is perfectly clear. When first seen by the writer the eyes were in the following condition: No swelling of the lids; moderate pericorneal injection; cornea clear; anterior chamber normal in depth; irides slightly discolored; pupils moderately dilated, with a yellowish reflex from the anterior portion of the vitreous. There was no perception of light, no tenderness on pressure, but a marked lessening of the tension of the globe. Three days later, the anterior chamber in each eye was obliterated by pressure from behind the lens; the eyeballs being harder than normal. One week later, the anterior chamber was again restored and tension had again fallen much below the normal. From that time there was progressive atrophy of both eyes until now there is left only the greatly shrunken globes, with, of course, absolute blindness.

In this case there must have been an extension of the intracranial inflammation along the sheath of the nerves and not a forcing of the products of inflammation forward, as sufficient pressure within the cranium to produce this must evidently have become apparent by more or less paralysis.

The case is reported as a clinical contribution to this somewhat rare and obscure trouble, which is certain to be met with in the course of practice.

Thursday, July 18th—Morning Session.

Dr. C. S. Bull presented a contribution to the subject of

TUMORS OF THE ORBIT AND NEIGHBORING CAVITIES.

Case I. was an adeno-sarcoma of the lachrymal gland. It was operated on two years ago. There has been no return.

Case II. was one of abscess of the ethmoid cells, frontal sinus and orbit in a male aged forty-six years. It was opened, washed out, and drained. There was perfect healing.

Case III.—Tumor of the maxillary antrum, nasal fossa, ethmoid cells, orbit and cranial cavity. The eye was enucleated and the maxillary antrum cleaned out. A large opening was found through the orbit into the anterior fossa of the skull and through this the tumor extended. The evening following the operation the patient became comatose, and died the next morning.

Dr. Knapp thought that the report of these cases shows the necessity of early operation in all cases of tumors of the orbit or near the orbit.

Dr. B. A. Reeve, of Canada, said that in a number of these cases of empyema of the frontal sinus he had found hypertrophy of the middle turbinated bone. This is a point of importance in etiology and prophylaxis.

Dr. Bull then reported a case of

DOUBLE CHOKED DISK, DUE TO INTRACRANIAL TUMOR, WITH AUTOPSY.

The patient, a married woman, twenty-three years

of age, was seen June 30, 1888. In February, 1888, had a miscarriage and was quite ill for a couple of weeks. There was dull headache at vertex. This became more severe. During April there were occasional attacks of diplopia. During May there was failing vision. When examined, $V = \frac{18}{xx}$ in each eye. Accommodation was normal. There was no peripheral limitation of the field of vision either for form or color. There was an irregular negative scotoma for all colors. There was marked exudative neuro-retinitis with hemorrhages in both eyes. Urine proved normal on examination. The only symptoms of intracranial disease were the lesions of the optic nerve and the headache at the vertex. The diagnosis was intracranial tumor at the base of the brain. Vision rapidly failed, and by September 25th there was no perception of light. The mental faculties gradually became impaired. Right hemi-anæsthesia came on. The patient died May 5, 1889. Autopsy showed a tumor involving the corpora quadrigemina and extending to the anterior crura of the cerebellum. The growth appeared to be a glio-sarcoma.

DR. MYLES STANDISH, of Boston, reported five cases of

PARTIAL TENOTOMIES IN CASES OF NEURASTHENIA WITH INSUFFICIENCY OF THE OCULAR MUSCLES,

in which he had performed this operation on account of constant headache, inability to use the eyes, and neurasthenic symptoms. In all but one there was marked and prompt relief of the local and general symptoms by the operation.

DR. E. E. HOLT, of Portland, called attention to the

EFFECT UPON THE ACCOMMODATION OF A PATIENT'S EYE CAUSED BY LOOKING INTO THE MIRROR SET OBLIQUELY IN THE ROOM DURING THE OPHTHALMOSCOPIC EXAMINATION.

Directing the patient to look with one eye into a mirror set obliquely while the other was examined with the ophthalmoscope, an element of ease was found in making the examination and of comfort and steadiness on the part of the patient never experienced before. The eye fatigues quickly in looking at a single object. Looking into the oblique mirror gives the impression of gazing into the distance. A notable change in the pupil will be observed when the patient is directed to look at an object at the distance of the mirror and when he is directed to look at objects reflected from it.

DR. O. F. WADSWORTH, reported a case of

PARALYSIS OF THE SPHINCTER IRIDIS

without affection of the accommodation, lasting several months, and following the instillation of homatropine in both eyes.

DR. THEOBALD thought that in all such cases it is important to exclude malingering. It would be possible for the patient by the use of a weak solution to keep up the mydriasis without affecting the accommodation.

DR. S. RISLEY said that another practical explanation of such cases is the use of a pipette previously used for a solution of mydriatic for a solution which contains no mydriatic.

DR. THEOBALD called attention to

THE EMPLOYMENT OF OLEATE OF VERATRIA TO FACILITATE THE DETERMINATION OF ERRORS OF REFRACTION.

A mydriatic affords valuable aid in myopia and in hypermetropia, but in astigmatism its use is not so satisfactory. In astigmatism he had found great help from the use of a ten per cent. oleate of veratria to the temple and forehead once a day for three or four days. This seems to exert a quieting effect upon the ciliary muscle, and especially of the radiating fibres, and lessens the tendency to asymmetrical accommodation. The following rule was formulated in regard to the correction of astigmatism. When the astigmatism is according to the rule, we need correct only that which is readily made manifest. On the other hand, in astigmatism against the rule, we are warranted in correcting fully every part of the defect which can be rendered manifest.

DR. HOLT called attention to

THE INEFFICIENCY OF HYDROBROMATE OF HOMATROPINE IN CONTROLLING THE ACCOMMODATION FOR THE PURPOSE OF FITTING GLASSES.

His experience was that this drug could not be relied upon. He reported one case in which the latent hypermetropia revealed by three per cent. solution of hydrobromate of homatropine was just one-half of that revealed by a one per cent. solution of atropia.

DR. EDWARD JACKSON, of Philadelphia, had found homatropine entirely satisfactory when used properly. The instillations must be repeated at short intervals, five or ten minutes, and three or four instillations practised. The effect rapidly passes off, and the examination must be made within one or two hours. He had followed the use of homatropine by another mydriatic without alteration in the result.

DR. JACKSON now read a paper on

AMETROPIA AS DETERMINED UNDER COMPLETE MYDRIASIS.

He had examined 4000 eyes under complete paralysis, and presented the following table of his results, these were compared with results obtained by another observer without mydriasis:

	With mydriasis.	Without mydriasis.
Compound hyperopic astigmatism	40 per cent.	9½ per cent.
" myopic "	9 "	11 "
Simple hyperopic "	6 "	16½ "
Simple myopic "	2 "	24 "
Mixed astigmatism . . .	6½ "	2 "
Hyperopia	31 "	10 "
Myopia	4 "	9½ "
Emmetiopia	1½ "	17½ "

DR. W. F. MITTENDORF, of New York, related

A CASE OF AMBLYOPIA DUE TO CHLORAL HYDRATE.

His object was to put on record a case of toxic amblyopia, due to chloral hydrate. The patient had for six months been in the habit of taking from forty to sixty grains at night to induce sleep. Suspension of the drug relieved the amblyopia.

EXECUTIVE SESSION.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President.—Dr. Hasket Derby, of Boston.

Vice-President.—Dr. George C. Harlan, of Philadelphia.

Secretary and Treasurer.—Dr. Samuel B. St. John, of Hartford.

Corresponding Secretary—Dr. J. S. Prout, of Brooklyn.

Delegate to the Ex. Com. of the Congress of American Physicians and Surgeons.—Dr. John Green, of St. Louis. Alternate, Dr. D. B. St. John Roosa, of New York.

The Society then adjourned, to meet at the Hotel Katerskill, on the third Wednesday of July, 1890.

FIRST CONGRESS OF THE GERMAN DERMATOLOGICAL SOCIETY.

Held in Prague June 10 to 12, 1889.

(Specially reported for The Medical News.)

The First Congress of German Dermatologists was officially opened in Prague on Monday, June 10th, under the Presidency of Professor Peck, of the University of Prague. More than eighty dermatologists from all parts of Germany and Austria were present, as well as from America, Russia, and Japan. All the professors of the University of Prague and most of the physicians of that city were also present.

Dr. Arning, of Hamburg, read a paper on the

INOCULATION OF LEPROSY.

He gave some information about the first successful inoculation of leprosy which he made in 1884, at the Sandwich Islands, and from which he had just received news. In 1884 the Minister of the Sandwich Islands placed at his disposal a murderer who had been condemned to death, who had never had leprosy, and whose family was exempt from any hereditary contamination. In the contract he had it inscribed that the subject on which the experiment was being made would be kept for several years in a well-ventilated and healthy prison, separated from all the other prisoners, so as to exclude all subsequent accidental contamination. He implanted in several parts of the man's body fragments, of leprous skin; moreover, he inoculated leprous pus into superficial bullæ and punctures, as in vaccination. The infectious matter was derived from a small girl, nine years old, who presented a tuberculous leprosy, and who had just had a severe leprous fever. The vaccinations in the artificial blister and punctures gave negative results. On the other hand, in the fourth week after the inoculation, the disease developed itself under the form of a subacute articular rheumatism, first in the flexed portion of the left elbow (the implantation of the fragment of skin had been done on the left arm), then in all the articulations, and persisted for four months; then there appeared along the ulnar nerve characteristic swellings, which disappeared after six months. During this time there developed at the seat of vaccination, the cicatrix of which presented the appearance of a keloid, a typical leprous nodosity, of the size of a pea, in which was found an enormous number of leprous bacilli. He could not admit that they were only derived from the implanted skin, for after sixteen months this nodosity contained just as large a number. After he returned to Europe a revolution occurred in the Sandwich Islands, and the physician of the prison was displaced. This physician writes that, according to his memory, his notes having been destroyed, that the leprosy inoculated in 1884 made great progress, and from the last news, which he received in March, 1889, the patient was in a state of leprous marasmus.

This inoculation, he added, however, is not beyond objection, for the individual might have been predisposed to it from belonging to a favorable race, and living in a country where leprosy exists, and perhaps the individual or climatic predisposition is of great importance in the final success of the inoculation. This prevented him from drawing conclusions as to the inoculability of leprosy.

Dr. Neisser, of Breslau, spoke on the

IMPORTANCE OF THE GONOCOCCUS FOR THE DIAGNOSIS AND TREATMENT OF GONORRHŒA,

which microbe was discovered by himself. He recognized the existence of urethral inflammations due to physical or chemical irritants as well as the presence of other species of microbes, and has tried to establish the three following facts:

1. Is the gonococcus the real virulent agent of the disease? To this he replied affirmatively, for this microorganism is always found in contagious blennorrhagias; still it can be found associated with other microbes, but the different clinical character of these mixed infections demonstrates the specific character of the gonococcus. Lustgarten and Mannaberg have seen in certain cases of urethritis in man diplococci which very much resemble the gonococci, but from a bacteriological point of view the microörganisms were different, for these diplococci develop themselves on substances which are usually employed as cultures for microbes, while the gonococci can be cultivated only on blood serum.

2. Why is the number of gonococci not in relation with the importance of the suppuration? Suppuration being nothing else but the reaction of the mucous membrane against the gonococci, one can understand that on a second or third infection the mucous membrane will react more slowly than in a first attack, although the number of microörganisms may be very large.

3. Can one rely on the presence of the gonococcus to establish a differential diagnosis? The answer is affirmative again, for the presence or absence of the gonococcus is of great importance in certain doubtful cases, especially in those that belong to legal medicine or to the administrative hygiene of prostitutes. The infection must be combated as early as possible, without affecting the mucous membrane. This is the first and important therapeutical rule, the patient must then be treated in the acute stage, and the medical treatment must be stopped as soon as it is demonstrated that the gonococci have disappeared. Injection of nitrate of silver is the best treatment according to the author.

Drs. Steinschneider and Galewski recommend to establish a differential diagnosis between the diplococci and gonococci, Gram's method of coloring with Bismark brown being followed.

Dr. Finger, of Vienna, said that in most of his cases of blennorrhagias he had found the gonococcus present, but in other rare cases these microörganisms were replaced by other bacilli; this might have been due to the fact that the disease had existed for a long time, as we know that gonococci are to be found more especially in parts recently involved. A good clinical sign to differentiate pseudo-blennorrhagia from blennorrhagia is that

in the first case the acute symptoms are absent and even so at the very beginning.

Dr. Obex Laender, of Dresden, said that the diagnostic value of the presence or absence of the gonococcus in gonorrhœa is unquestionable, but its absence in chronic cases is not a proof that the disease is or is not more virulent; that is why he thought that in such cases urethroscopy of great service; it is also useful when the secretion has become intermittent. In any case he thought that no method ought to be used to the exclusion of the other; and as to the rational treatment, we must principally observe the alteration of the mucous membrane.

Dr. Grunfeld, of Vienna, did not think it necessary to search for gonococci; but it is necessary to make a diagnosis of the local lesions by means of the endoscope, for this allows us to know exactly what parts are really involved. As to the good results of the early injections of nitrate of silver, he indorsed what had been said by Dr. Neisser.

Dr. von Zeiss, of Vienna, thought that the gonococcus of Neisser was the real cause of gonorrhœa, but this fact has not been absolutely demonstrated; and we must be still more on our guard, since the publication of the researches of Bockhardt on pseudo-blennorrhagia. He had also observed cases in which there were diplococci, which, on staining, took up exactly the same color as Neisser's gonococci; before identifying these last, he thought it necessary to repeat the experiments before establishing definitely the absolute value of Neisser's gonococcus.

Dr. Klotz, of New York, thought endoscopy the method which when employed in the treatment of chronic gonorrhœa was attended with the most success.

Dr. Friedheim, of Leipzig, held that injections are the best mode of treating gonorrhœa, because they act simultaneously on the secretion and on the gonococci. He thought, like Dr. Neisser, that we must destroy the microörganisms without wounding the mucous membrane; for this reason he recommends salicylate of mercury 1 : 270; the salts of thallin in suspension, etc. At the beginning of the treatment he gives injections of corrosive sublimate, which are afterward replaced by injections of zinc, tannin, etc.; yet he thinks that the surest remedy in gonorrhœa is nitrate of silver.

Dr. Neisser said that endoscopy may render service, but it is very difficult of application. Urethroscopy he considered of little value.

Dr. Jacob, of Breslau, demonstrated that certain alterations of the vaginal mucous membrane in prostitutes, which have been described in M. Oberlaender's work as being of a specific nature, have not such an origin.

Dr. Pick, of Prague, read a paper on

THE TREATMENT OF ECZEMA.

He employs, to prevent the irritation of the involved parts, in the acute period, corrosive sublimated gelatine, which allows the patient to go on with his daily occupation. If the exudation is an extensive one, he applies the saponified salicylic acid plaster all over the body, and keeps it in place by bandages which are allowed to remain six or eight days in position, and the patient is allowed to get up and walk about. The dressing must be changed when the patient experiences a burning sensation. This treatment gives good results, as the affected parts are protected against external influences.

Dr. Pick also spoke on

THE TREATMENT OF LUPUS.

He presented a patient suffering from lupus who, on entering the clinic, had a number of tumors on the body; several of these were removed, but the diagnosis was not easy, and a histological examination demonstrated the presence of giant-cells and miliary tubercles.

Dr. Doutrelepont, of Bonne, said that they often find on the borders of the Rhine cases similar to the one just described, where lupus tumors very much resemble sarcomatous tumors; the finest giant-cells are found more especially in the glands, in which regions the tubercle bacilli agglomerate in greatest number. He thought that lupus can be cured if the patient be placed in good hygienic condition. All the patients while at the hospital have no return of their trouble, but as soon as they are allowed to return home the disease recurs; this he attributes to their poor social condition. He has treated several patients, who for the first five or six years have had no recurrence. The treatment which he employs consists in topical applications of corrosive sublimate; but the disease being a long-lasting one, he curettes very deeply, and from fear of a miliary tuberculosis, also cauterizes with Paquelin's cautery, and then prescribes hot fomentations. If, after the application of the corrosive sublimate and the renewal of the crust, there are still granulations presenting a bad appearance, he uses pyrogallic acid, which he replaces two or three days later by corrosive sublimate applications, and then continues this treatment, using alternately one or the other remedy, until the obtained cicatrix becomes a perfect one. Sometimes lupus will give rise to a general infection with fever, swelling of the lymphatic glands, diarrhœa, etc., but such cases are very rare.

Dr. Lesser after having well curetted the parts, cauterizes with a strong solution of nitrate of silver, which is indicated in order to prevent general infection.

Dr. Touton thinks pyrogallic acid ointment the best means to destroy the bacillus. He applies it for three days preceding the scraping or curetting; afterward he uses the corrosive sublimate solution 1 : 1000 for the first day and then the 1 : 5000 solution.

Dr. Pick, like Dr. Doutrelepont, has seen that the physical condition of poor patients became much better during their stay in the hospital; but he did not attribute this change to the better sanitary condition in which they are placed, but rather to the period of the disease. If the lupus is unique and constitutes a primary process, the best results can be obtained if the disease is immemediately removed, but if the disease depends upon a general tuberculosis, one cannot hope to do very much good. He thought that the seat of the lupus is not an indifferent one, and lupus of the nose, especially the one which involves the mucous membrane appears to him very grave. As for the treatment, he prefers ablation to scraping out, for after this operation he has seen the occurrence of a few cases of miliary tuberculosis, which rapidly terminated in death. As caustics, for the last twenty years, he has used potash with lime, which gives cicatrices without recurrence; this does not mean that there is no trouble of the recurrence of the trouble, but he has never seen it in the cicatrix itself. After the cau-

terization he used to employ a sublimated ointment, but for some time past he has allowed the crust to remain undisturbed with no bad results; when the crust falls he applies balsam of Peru.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting, held at Newport, R. I., June 25, 26, 27, and 28, 1889.

(Specially reported for THE MEDICAL NEWS.)

SECTION OF OPHTHALMOLOGY.

DR. GEORGE E. FROTHINGHAM, of Michigan, Chairman, in opening the Section, delivered an address upon

THE NEED OF DISCUSSING OPHTHALMIC SUBJECTS,

in which he referred to some of the many still mooted points in ophthalmology requiring the exercise of the joint wisdom of the profession for their elucidation.

DR. ROBERT TILLEY, of Chicago, then read a paper entitled

WHAT CAN WE DO TO MAKE THE CENSUS OF 1890 CONTRIBUTE EFFICIENTLY TO A CLEAR CONCEPTION OF THE CAUSES OF BLINDNESS IN THE UNITED STATES.

He urged the importance of more reliable statistics as to the causes of blindness, especially as to contagious ophthalmias, and other clearly preventable diseases; that more definite knowledge in this direction was required, before the profession could advise the public as to what measures of prophylaxis should be resorted to, and how urgent was the need of their adoption; and he urged that the present opportunity for extending our knowledge in this direction should not be wholly lost.

An investigation having the scope indicated by the twenty-seven questions proposed by Magnus, though carried out only in certain most thickly settled and readily accessible parts of the country, would elicit facts of great value. The takers of the general census might ascertain the names and residences of all persons in the community who had suffered functional loss of one or both eyes, together with the general facts as to nativity, former residence, etc.; and could furnish a full list of such persons to a qualified medical man who could continue the investigation as to completeness of the blindness, diagnosis, causation, the general medical history, etc.

The Section, at Dr. Tilley's suggestion, appointed a committee to act in conjunction with a similar committee to be appointed by the American Ophthalmological Society to confer with the Superintendent of the Census, and urge any practical plan of improving the census statistics as to blindness. This action was endorsed by the general session of the Association.

DR. A. E. PRINCE, of Jacksonville, Ill., spoke of

THE PREVENTION OF PAIN AND THE IMPROVEMENT OF THE STUMP FOLLOWING EVISCERATION OF THE EYE.

He found evisceration to be an efficient substitute for enucleation, safer, and to be recommended, perhaps, in all cases where there was no suspicion of malignant disease, as likely to furnish a better stump. A serious objection had been that there was more pain after it than after enucleation. This was probably due to the involvement of the ciliary nerves in the inflammatory reaction. At all events it had been greatly diminished by thoroughly cauterizing the inner surface of the sclera, at the end of the operation, by carbolic acid.

In applying the artificial vitreous shells proposed by Mules for use after evisceration, Dr. Prince had found that, although the result was for a time satisfactory, in many cases the tissue over the shell underwent absorption, the cicatrix gave way and the shell was ultimately extruded. As the shell came away, however, its place seemed to be at least partly filled with a mass of granulations, which subsequently condensed and contracted, but in the end gave a rounded and fuller stump than was obtained when an artificial vitreous shell was not used. This observation had led him to pack the scleral cavity with iodoform instead of introducing the glass shell, and this simpler procedure had given the same satisfactory result.

DR. H. W. WILLIAMS, of Boston, spoke on the

ADVANCES IN OUR KNOWLEDGE OF SOME CEREBRAL OCULAR AND INTRA-OCULAR LESIONS, WHICH FACILITATE THE DIAGNOSIS AND TREATMENT OF IMPORTANT DISEASES.

He reported a number of cases that had fallen under his observation, mainly of brain tumor with optic neuritis, in which the diagnosis founded on the ocular symptoms had been verified by autopsy.

DR. J. L. THOMPSON, under the heading

SOME CASES OF INFLAMMATION AND ATROPHY OF THE OPTIC NERVE,

reported a series of cases allied to those of Dr. Williams.

DR. E. J. GARDNER, of Chicago, then spoke on

THE NON-SURGICAL TREATMENT OF STRABISMUS CONVERGENS.

The careful correction of all ametropia, and the continuous wearing of the correcting glasses, without resort to other measures, had been tried in a series of cases by him with complete success in a considerable proportion of cases and marked improvement in many others. He regarded orthoptic exercises, which had not been used in any of these cases, as also of considerable value, and believed that such measures should always be tried before resorting to operative interference with the eye muscles.

DR. LEARTUS CONNOR, of Detroit, read a paper upon

TOBACCO AMBLYOPIA.

Most cases of it occur, he said, in persons addicted to the use of both alcohol and tobacco in excess. It has, therefore, been claimed that alcohol, which is known to cause definite organic changes, should be held responsible for it. He reported two cases of it, quite typical, with central scotoma for colors, and lowered vision, in which the patients smoked excessively but used no alcohol. One was that of a florist, fifty-five years old. Vision had been impaired for three months, and was reduced to R. $\frac{20}{C}$, L. $\frac{18}{CC}$; but the physiological action of nitrite of amyl, proposed as a diagnostic test by Mr. Henry Power, brought it up to $\frac{20}{L}$. Complete discontinuance of the tobacco and the use of strychnia brought about a

complete restoration of the fields for color vision, and vision equal $\frac{20}{XX}$ in four months.

In the second case, a clergyman, forty-three years old, also a hard smoker, but not using alcohol, three months ago had vision equal R. $\frac{4}{CC}$, L. $\frac{20}{CC}$; and complete oval color scotoma. Under similar treatment, the color scotoma had disappeared and vision had risen to $\frac{20}{XXX}$. Both of these patients had just prior to the development of the amblyopia been subjected to mental depression under which they had lost appetite, and had taken less food and smoked more freely than usual.

Dr. Connor had been able to collect twenty-seven cases of this kind of amblyopia in users of tobacco, but not alcohol; and but one case of central amblyopia in a drinker who did not use tobacco. Then there were twenty-five cases of recovery while still using alcohol, but abstaining from tobacco. He had seen no case of the amblyopia in a woman who did not both drink and use tobacco.

DR. H. KNAPP, of New York, thought it was pretty well established that this form of amblyopia was due to a limited retro-bulbar neuritis. There were three stages presenting different ophthalmoscopic appearances, the first giving no change in the appearance of the disk, the second showing a triangular area of pallor or atrophy of the disk toward the temporal side or macula, the third showing the appearance of an ordinary simple atrophy. Recently he had found this typical triangular area of atrophy in the eye of a young lady who neither smoked nor drank. But on further examination he discovered that there was a complete coloboma of the region of the macula. So that this interesting anomaly confirmed most beautifully the observations as to the real significance of this limited area of pallor.

DR. MYLES STANDISH, of Boston, had reported a case in which this retro-ocular neuritis had been followed shortly by general paralysis from multiple alcoholic neuritis. He believed that the occurrence of the amblyopia in any case should be regarded as evidence of a tendency to peripheral neuritis in general, that required the complete discontinuance of the use of alcohol, as well as of tobacco.

DR. P. D. KEYSER, of Philadelphia, had seen a case in which each attempt to smoke caused intense nausea, but the attempt to establish a tolerance for the drug was persisted in until what seemed to be a tobacco amblyopia supervened.

DR. J. J. CHISOLM, of Baltimore, had seen this form of amblyopia in a man who smoked but half a cigar a day, because any larger amount made him sick. He could not say that the occurrence of this failure of sight depended upon the use of any certain amount, although the amount required to produce it was generally large. He had not seen it except in persons who had used tobacco many years; had seen a case in a woman who smoked regularly. Formerly he had believed that it was not produced by chewing alone, but had recently seen cases in which this was the only way that tobacco was taken.

DR. A. BLITZ had seen a case in a woman who regularly used snuff. Recovery occurred under abstinence and the use of strychnia.

DR. E. J. GARDNER had seen tobacco amblyopia in the case of a clergyman who used no liquor. In this case no decided improvement occurred until strychnia was given in doses of one-third of a grain, hypodermically, every second day. This dose at first caused no inconvenience, but as vision improved the dose had to be diminished.

DR. S. C. AYRES, of Cincinnati, reported two cases of

MYXO-SARCOMA OF THE OPTIC NERVE,

one with small round, the other with small spindle cells, which he had removed, and which had neither of them shown signs of recurrence. The eyeball was in both instances removed with the growth, though not involved in it. He also gave a full *résumé* of all previously reported cases.

DRS. P. D. KEYSER, J. A. LIPPINCOTT, and J. L. THOMPSON reported cases they had excised without subsequent return.

NEEDLESS AND ANNOYING RESTRAINTS AFTER EYE OPERATIONS.

DR. J. J. CHISOLM, of Baltimore, under this title read a paper urging that more attention should be paid to the principle of treatment, that the ordinary course of living when in health should be disturbed as little as possible during the period of recovery from surgical interference with the eye, and that the dark room, bandages, and confinement to bed are ordinarily quite unnecessary if not positively injurious after even the capital operation on the eye.

GLAUCOMA FULMINANS AFTER CATARACT OPERATIONS WITH IRIDECTOMY.

DR. P. D. KEYSER reported two cases in which after the modified Graefe operation the eyes seemed to be doing well until, in one on the fifth day, in the other on the ninth day, hemorrhage occurred and the tension rose to + 3. One eye was thus destroyed, but the other was saved by an early additional iridectomy.

RESPECTING THE DETERMINATION OF THE DEVIATIONS IN STRABISMUS, AND THEIR TREATMENT.

DR. G. T. STEVENS, of New York, urged that the method of measuring the deviation by the prism required to bring into line the double images, was superior to all other ways of estimating the amount of squint. By careful trials, diplopia could be secured in almost every case. Where the degree of squint was very high a partial correction should be secured by one or more partial tenotomies or advancements, and then an accurate determination of the remaining deviation could be made. In but few cases was the deviation purely lateral. The result to be aimed at in all cases was not simply cosmetic, an apparent straightening of the eyes, but the restoration of normal binocular vision.

DR. E. JACKSON, of Philadelphia, thought that here, as in other parts of ophthalmology, an objective test had great advantages over a subjective test; and that probably a tenotomy did good simply by crippling the muscle involved. Even a partial tenotomy may accomplish this.

Dr. A. Blitz, of Indianapolis, reported

A TYPICAL CASE OF OCULAR IRRITATION CAUSED BY CHRONIC RHINITIS, RELIEVED BY TREATMENT OF THE NASAL TROUBLE.

Soothing applications failed to benefit, but the application of the galvano-cautery to the diseased nasal tissue gave prompt relief.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, June 3, 1889.

J. Ewing Mears, M.D., in the Chair.

Dr. T. G. Morton reported the following case of

COMPOUND COMMINUTED FRACTURE OF THE FOREARM; COMMINUTED FRACTURE OF THE HUMERUS; UNRECOGNIZED DISLOCATION; SUBSEQUENT SUTURE OF THE NECK OF THE HUMERUS; RECOVERY.

Fred. O., aged twenty-four, was admitted into the Pennsylvania Hospital, December 1, 1888, with a severe shock and extensive injuries, resulting from being caught in the belting of machinery. There was a compound comminuted fracture of the forearm about the middle third, the ulna was found protruding some two inches; also a comminuted fracture of the humerus which involved the elbow-joint, and extended above the middle of the bone. The protruding portion of ulna could not be reduced until after a free division of skin and a portion of bone was removed. The swelling of the arm and shoulder was so great that it was impossible to make any further diagnosis other than that of a very extensive injury of the soft parts about the shoulder and comminution of the humerus. The limb was elevated and lead water and laudanum applied; subsequently a dislocation of the head of the humerus was made out, but owing to the serious nature of the injuries of the arm and forearm no attempt was then made at reduction—some weeks later when union had taken place the head of the bone was found attached to the tissues. The arm was practically useless so far as shoulder motion was concerned. March 14, 1889, he was admitted to the Orthopedic Hospital; two days later he made a vertical incision through the deltoid down to the head, and found it so firmly attached in the abnormal position that it was not possible without the greatest risk to attempt to dislodge it. He then carried a chain saw around the bone at the anatomical neck and sectioned the shaft obliquely from below upward and then readily placed the divided end in the glenoid cavity. A rubber drain was placed in the wound, which was closed with gut sutures. The wound united promptly; a slight sinus remains. Massage and electricity have done much for the feeble muscles, now much improved, and a fair amount of motion in the shoulder has resulted—this is constantly improving. The patient has been since the operation quite free from pain and bids fair to have a very useful arm. Dr. Morton has been unable to note that any trouble has arisen from the presence of the head of the bone in its unnatural position.

Dr. Mears said that he reported a case some years ago in which he made a subcutaneous section of the neck of the bone for old subcoracoid luxation. The result was excellent. The patient had good motion and relief from pain and also from the atrophy, which was progressing at the time of the operation.

Dr. Morton said that in regard to dislocations, he had an interesting case at the Pennsylvania Hospital, where the head of the humerus was entirely broken off from the shaft and dislocated in the axilla. He made an incision and removed the dislocated head. The injury was produced by a shutter falling from a distance and striking the shoulder just below the acromion. The patient was seventy-two years of age, and some four weeks after the accident died from catarrh of the bowels.

Dr. Morton also reported a case of

DOUBLE OPERATION IN A CASE OF DOUBLE EQUINO-VARUS.

Recently, in a case of double equino-varus, he concluded to perform the double operation—the result was most satisfactory. The little patient, four years of age, was admitted to the Orthopedic Hospital May 9, 1889. He walked upon the dorsi of the feet, on which large and dense bursæ had formed. The feet were cleansed and covered with a mercuric solution 1:2000 for several days prior to the operation.

On May 12th, the Esmarch bandage was applied on the right limb. The tendo Achillis was divided; the incision on the outer side of the foot included the bursa, which was removed. A wedge of bone was then excised with the cutting pliers and the usual horizontal and vertical incisions made; on the inner side of the foot, which included all the soft tissues down to the tarsus, the anterior tibial tendon came into view and was sectioned; the tendon of the posterior wall was readily found and divided, likewise the plantar fascia and all tense tissues—no vessels required ligation. The wounds of the open incision gaped widely; the wound incident to the tarsectomy was brought together by gut sutures. The foot was brought into a normal position and placed upon a right-angle tin splint.

The left foot was at once operated upon in a similar manner by Dr. S. K. Morton. There was no pain or rise of temperature, and in a few days the child was out of bed. On the thirteenth day the dressings were removed—no swelling or irritation.

Among the cases reported at the last meeting of the Academy was a tarsectomy with tenotomy, the patient a girl of thirteen years of age, for severe equino-varus. There was no difficulty in getting the foot in a good position, and he concluded that the open incision was not necessary; subsequently, he found some disposition to the recurrence of varus, and on May 28th divided the tissues on the inner side of the foot down to the tarsus, sectioned the anterior and posterior tibial tendons and all soft structures involved. The foot promptly came into excellent relaxed position and has not since been dressed.

Dr. J. M. Barton reported a successful operation for the relief of a

CONGENITAL UMBILICAL HERNIA

in a child thirty-three hours old.

Mrs. C. of this city was delivered by Dr. John Graham on November 3, 1888, of a female child. At the request of Dr. Graham he saw the child at 1 P.M. of the same day and found a healthy-looking female child, fully developed except that the sagittal suture was still open

to the extent of half an inch. There was a tumor at the umbilicus about the size of an adult fist; it was composed of omentum and intestines, which had protruded through an opening, over two inches in diameter, in the abdominal wall. The tumor was two and a half inches in height, over three inches in diameter, and was slightly pedunculated. It was covered by a thin layer of the expanded gelatinous matter of the umbilical cord, which was as transparent as glass. The intestines and omentum could be distinctly seen through it, and after they were returned to the abdominal cavity the left lobe of the liver could also be recognized. The cord had been tied and joined the tumor about half an inch to the left of its apex the vessels of the cord could be traced running down the left side of the tumor and entering the abdomen at the extreme left of the opening and midway between its upper and lower extremities. The child appeared to be otherwise in perfect health and had already made vigorous efforts to obtain nourishment. It seemed to be free from pain, except while the intestines were being reduced, which was done with some difficulty, as the abdominal cavity seemed scarcely large enough to contain them. A pad of cotton was then placed over the umbilicus and a firm flannel bandage bound around the child.

At twelve o'clock on the following day he met Dr. Graham for the purpose of operating, permission not having been obtained before; the child was then thirty-three hours old. On removing the dressing, which had retained most of the intestines in the abdominal cavity, the hernia was immediately reproduced, but owing to the shrinking of the gelatinous tissue which formed its sac it was not as large as the day before. It now measured six and three-quarters inches in circumference and four and a quarter inches over its convexity. The covering was not quite opaque, though the abdominal contents could still be indistinctly distinguished through it; it readily broke down under the fingers and was quite offensive, requiring repeated applications of a solution of the bichloride of mercury for the comfort of the operators.

It had been their intention, if the parts were found in the same condition as the day before, to pass long harelip pins across the opening, bringing its edges together and leaving the sac on the outside to shiver and dry. As this proved on trial to be ineffectual, the entire sac was trimmed away. About half an ounce of opaque serum with flakes of lymph floating in it ran from the abdominal cavity and the bowels exposed were now highly inflamed, being of a deep red color with patches of lymph lying upon them and glueing them together. Thinking the peritonitis was probably purely local and that the rest of the abdominal cavity was protected from infection by these adhesions they were careful not to rupture them. The bowels were kept in place by an antiseptic sponge while the edges of the opening, which measured six and a quarter inches in circumference, were freshened and brought together with seven harelip pins. A space of an inch was left between two of the pins for drainage, the umbilical vessels passed through this opening and acted as drainage threads. This opening was left to prevent the damming up of any further secretion of serum or pus, which might rupture the adhesions between the bowels and cause the local peritonitis to become general. The closed wound was dusted with iodoform and dressed with mercurial gauze.

As there was great tension on the pins holding the parts together, and it seemed probable that they would ulcerate through in a few hours, two pieces of Mead's adhesive plaster, each about six inches square, were placed one on each side of the wound, with the extremities that ran toward the spine cut into many tails. They approached in front to within an inch and a half of each other and were laced together by a strong cord placed over the dressings.

Nov. 5, child doing well, cries but little, and has no fever. The wound looks well and is not offensive.

6*th*. Slight discharge of pus through opening.

7*th*. About two drachms of pus.

8*th*. Six of the pins removed, wound slightly offensive, three drachms of pus discharged.

There was but little pus after this date. The wound was kept firmly supported by the plaster for two weeks and was dressed daily; as it was then firmly healed, it needed no further attention. The resulting scar is three and a half inches long. This condition, in a slight degree, is not very rare, but he was not aware of any case where the hernial protrusion was so extensive, except one reported as a "Laparotomy in a Child Sixty Hours Old," by Dr. Stolypinski in the *Centralblatt für Gynäkologie*, for March, 1889. The operation was performed at the clinic of Prof. Phaenomenoff, of Kassan, Russia. The tumor in this case was the size of a goose-egg, but the hernial opening was quite small, making it difficult to reduce the intestines, but there appeared to be no difficulty in retaining them after they were reduced. The opening was closed with silk and catgut. This child also made a good recovery.

NEW YORK ACADEMY OF MEDICINE.

SECTION OF PÆDIATRICS.

J. LEWIS SMITH, M.D., CHAIRMAN.

Stated Meeting, May 11, 1889.

DR. FOREST exhibited a child two and a half years of age which was unable to stand, walk, or creep, owing to

GENERAL MUSCULAR PARESIS.

There was no history of a previous severe illness. Dr. Forest was inclined to attribute the muscular insufficiency to a narrow prepuce, which he intended to dilate.

DR. SEIBERT said that in his opinion the muscles become atrophic from a permanent bilateral brain trouble in consequence of meningitis in early life.

DR. A. JACOBI remarked that he would not formulate an opinion, as all would be guess-work in the absence of a history of the case presented. He would state, however, that he had never known a case of paralysis, paresis, or insufficient development cured by dilating the prepuce.

DR. J. LEWIS SMITH said that there are cases on record of muscular paresis cured by dilating the prepuce. He distinctly remembered one case in which a child dragged one leg and was almost unable to walk, and soon got into a normal condition after dilating its narrow prepuce.

DR. FOREST then read a paper on

RETRO-PHARYNGEAL ABSCESS,

embracing chiefly the diagnosis, symptomatology, and treatment of the affection. He cited a number of cases observed, and gave a detailed account of one case of

collapse after incision. Although breathing was entirely suspended, he first cleared the throat of pus and then employed artificial respiration. The abscess did not refill and the child died of exhaustion on the following day. In conclusion, he stated that such abscesses are to be looked upon as suppurating lymphadenitis, and the diagnosis is best made by the finger.

Dr. Koplik had observed about twenty-five cases, in many of which a previous angina was noticeable. He would not sanction the introduction of the finger as a means of diagnosis, as sudden deaths have been reported from rupture of the pus sac. He uses a tongue depressor and makes an oblique incision which will not readily heal up, thus preventing reäccumulation of pus.

Dr. Seibert spoke of the snoring respiration as one of the marked symptoms of retro-pharyngeal abscess. The formation of such abscesses is invariably due to infection. When incising an abscess which is situated low down in the pharynx, he is in the habit of placing the child so that its head is lower than the body. As a rule, such abscesses refill several times.

Dr. Caillé remarked that within the last few years he has invariably punctured a pus sac in the pharynx, if accessible from the mouth, by means of a blunt instrument in order to avoid the speedy closure of an incised wound. The best instrument for the purpose is an ordinary depressing forceps which is pushed into the fluctuating swelling, after which the branches of the forceps are pressed apart, thus creating a ragged wound not liable to close.

Dr. Jacobi said that if any one sign was characteristic of retro-pharyngeal abscess it was a peculiar voice, which he would call "tin voice," which he never found mentioned in the text-books. When puncturing an abscess the child should be held upright and thrust forward as soon as the incision is made. If the incision is made with the head low there is danger of aspirating pus. He was recently called to operate upon a child which had been cyanotic all day from the pressure of the pus. On introducing his finger for the purpose of locating the swelling the child collapsed, and was dead. An incision was made at once and artificial respiration resorted to without avail. In all probability the child had aspirated pus all day long and was in a dying condition when he introduced his finger.

Dr. J. Lewis Smith remarked that he had never seen retro-pharyngeal abscess in a child over two years of age. In puncturing an abscess he would place the child upon its side face downward and he would always use the finger as a means of diagnosis.

Dr. A. F. Currier read a paper on

VULVO-VAGINITIS IN CHILDREN.

(See The Medical News, July 6, 1889, page 3.)

Dr. A. Jacobi said that inasmuch as a mucous surface must be denuded of epithelium to make infection possible, we shall find a simple catarrh to be the starting-point for every infectious vulvo-vaginitis. In treating by antiseptics it must be borne in mind that corrosive sublimate and boracic acid have no soothing action.

Dr. Koplik said that the majority of cases are simple in nature and the gonorrhœal forms are rare. He was convinced that the secretion from a simple form of vulvo-vaginitis could produce violent conjunctivitis. As regards treatment he uses a wash of tannin and alum in water and swabs the vagina twice a week with a ten per cent. solution of nitrate of silver.

Dr. Weeks said that a healthy mucous membrane can absorb infectious matter, and whenever we have pus we have infection. The micrococcus flavus is similar in appearance to the gonococcus and the latter is very common. A two per cent. solution of silver nitrate is a good germicide, a ten per cent. solution destroys epithelia and is entirely too strong. He had treated eighteen cases with sublimate 1 : 2000 with very good results.

Dr. Seibert said that the fact that girls with leucorrhœa marry and do not infect their husbands speaks against the gonorrhœal origin of the majority of cases.

Dr. Weeks replied that in every case of ophthalmia of the newborn the gonococcus is found. The infection takes place from the woman and in many cases the man is absolutely free from disease—thus the man not being infected is no proof of the woman not harboring the gonococcus.

NEWS ITEMS.

The College of Physicians and Surgeons of Baltimore.—The Faculty of the College of Physicians and Surgeons of Baltimore have filled the vacancies created by the deaths of Profs. John S. Lynch and Oscar J. Coskery and the retirement of Prof. A. B. Arnold as follows: Prof. Thos. S. Latimer has been transferred to the chair of Principles and Practice of Medicine and Clinical Medicine; Prof. Chas. F. Bevan to the chair of Principles and Practice of Surgery and Clinical Surgery; Prof. J. W. Chambers to the chair of Operative and Clinical Surgery, and Prof. George H. Rohé to the chair of Obstetrics and Hygiene. To fill vacancies created by these transfers new professors were elected as follows: Prof. Henry Sewall, of the University of Michigan, to the professorship of Physiology; Dr. George J. Preston to the professorship of Anatomy, with the Diseases of the Nervous System as a clinical branch of instruction. As an evidence of esteem on the part of his colleagues, Prof. Arnold was elected emeritus professor of Clinical Medicine on his retirement.

Pasteur's Latest Returns.—We quote the following latest returns of Pasteur's Institute from *L'Union Médical*, July 4, 1889:

From May 1, 1888, to May 1, 1889, 1673 persons, bitten by rabid or presumably (*très suspects de rage*) rabid dogs, had been treated, 1487 being French and 186 foreigners. Of this total number, 118 were bitten on the head or face. Six cases, four of which had received bites on the head or face and two on the limbs, were attacked with rabies during the treatment and died; four others developed the disease within a fortnight after leaving the Institute, the treatment having been discontinued. Three patients died of rabies after the complete conclusion of the treatment, and these, therefore, represent the number in which the treatment actually proved unsuccessful—a ratio of 1 in 554. If, however, one should also include the ten other deaths, "which," Dr. Pasteur naively adds, "would be illogical," the mortality would still only be 1 in 128.

The Rejuvenescence of Elderly Women.—Dr. Brown-Séquard, in concluding a communication to *The Lancet*,

July 20, 1889, on the effects produced on man by the subcutaneous injections of testicular liquid, states that "there are good reasons to think that subcutaneous injections of a fluid obtained by crushing ovaries just extracted from young or adult animals, and mixed with a certain amount of water, would act on old women analogous to that of the solution extracted from the testicles injected into old men."

It would be interesting to learn, also, the physiological effects upon old women of injections of the testicular liquid, and conversely of the effects upon old men of injections of the ovular.

An Insanitary Exhibition.—The practical sanitation at the Paris Exhibition is harshly and deservedly criticised. In some of the large restaurants attached to the exhibition the water-closets are in the middle of the kitchens! A less dangerous expedient for economizing space might have been found, and one which would not have thus outraged all sense of decency, common cleanliness, and the elementary precepts of hygiene.—*British Med. Journal*, July 20, 1889.

Connecticut's Health Statistics.—The annual report of the State Board of Health for the past year has just been presented to the General Assembly. According to the death-rate, the State is in about the same condition of healthfulness as 1887. The rate is between seventeen and eighteen in a thousand, which is lower than that in many States, and also lower than in Europe. The Board predicts that the malaria—which is decreasing, especially in Fairfield County, where it originated—will ultimately disappear. Typhoid fever is increasing, as are diarrhœal diseases. Whooping-cough and meningitis are proving more fatal, while croup and diphtheria are less so. An investigation is being made into the drinking water of the State. An analysis has already been made of the waters of seventeen of the largest cities and towns. Hartis found to have the best water thus far.

The Utilization of Garbage.—According to the *Bulletin of the Rhode Island State Board of Health* for May, the city of Milwaukee will soon abandon the cremation of garbage, which it was among the first of the western cities to adopt and advocate. It is proposed to substitute a dry process in the place of combustion. A company is at work with a new method which converts cities' refuse into articles more or less salable. The garbage is made to pass through a series of mechanical driers, and in the course of ten hours becomes a brown powder. The oil is pressed out or drawn off, and the residue can be sold as a fertilizer.—*N. Y. Med. Journal*, June 29.

NOTES AND QUERIES.

THE POSTPONEMENT OF THE MEETING OF THE PENNSYLVANIA STATE MEDICAL SOCIETY.

To the Editor of THE MEDICAL NEWS,

SIR: At the regular meeting of the Medical Society of the State of Pennsylvania, held in Philadelphia in June, 1888, it was resolved to hold the next annual meeting of the Society in Pittsburg, on the third Tuesday of May, 1889, and the Committee of Arrangements afterward assumed the responsibility of changing that day to the first Tuesday of June, 1889. When the members of the Society who were able to reach Pittsburg met on that day, they found that, owing to the terrible disaster at Johnstown, a large number of the delegates could not be present, and they adjourned to meet on the first Tuesday of September. Now, the Committee of Arrangements have assumed the responsibility of dispensing with the meeting of the Society altogether this year.

The question arises, Has that Committee of Arrangements, appointed for a special purpose, the right to assume the authority of the whole Society, and say no meeting shall be held in this year? For one, I think that they can only exercise the authority delegated to them, and cannot assume rights which the Society alone at a regular meeting can determine.

The principle always recognized is that no committee have the right to go beyond the duties specially assigned to them by the society which appointed them, and in this case the determination of that Committee that the Society shall not meet in this year is an assumption of power entirely beyond that delegated to them in their appointment as the Committee to make arrangements for the regular meeting of the Society in Pittsburg, and that only. Besides, they have fixed a day on which it will be impossible for several members who desire to attend to be present.

JOHN CURWEN.

WARREN, PA., July 29, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 16 TO JULY 29, 1889.

By direction of the Secretary of War, WILLIAM H. GARDNER, *Major and Surgeon*, is detailed to attend the encampment of the National Guard of the District of Columbia, at Fort Washington, Maryland, from July 22 to July 29, 1889, for the purpose of giving instructions to the Medical Officers and Hospital Corps in their respective duties.—Par. 1, *S. O. 164, A. G. O.*, July 18, 1889.

By direction of the Secretary of War, the extension of the leave of absence on surgeon's certificate of disability, granted H. G. BUNTON, *Captain and Assistant Surgeon*, in S. O. 22, January 26, 1889, from this office, is further extended two months on account of sickness.—Par. 1, *S. O. 162, A. G. O.*, July 16, 1889.

By direction of the Secretary of War, WILLIAM R. STEINMETZ, *Captain and Assistant Surgeon*, now at Baltimore, Maryland, on leave of absence on account of disability, will report in person to the commanding officer of the Watertown Arsenal, Massachusetts, for duty at that station, relieving James C. McKee, Lieutenant-Colonel and Surgeon.—Par. 3, *S. O. 166, A. G. O.*, July 20, 1889.

MCKEE, JAMES C., *Lieutenant-Colonel and Surgeon.*—On being relieved at the Watertown Arsenal, will repair to Philadelphia, Pa., and assume the duties of Attending Surgeon and Examiner of Recruits in that city.—Par. 3, *S. O. 166, A. G. O.*, July 20, 1889.

ROBINSON, SAMUEL Q., *Captain and Assistant Surgeon* (Fort Hamilton, New York Harbor).—Is hereby granted leave of absence for two weeks.—Par. 11, *S. O. 165, Headquarters Division of the Atlantic*, July 22, 1889.

BALL, R. R., *First Lieutenant and Assistant Surgeon.*—Leave of absence granted in S. O. 87, Department of the Missouri, July 9th, is extended five days.—Par. 1, *S. O. 167, A. G. O.*, July 22, 1889.

BALL, R. R., *First Lieutenant and Assistant Surgeon*—The extension of leave of absence granted in S. O. 167, July 22, 1889, from this office, is further extended ten days.—Par. 23, *S. O. 169, A. G. O., Washington*, July 24, 1889.

By direction of the President, the State of Arkansas, embracing Little Rock Barracks, is transferred to the Department of the Missouri.—*General Orders No. 66, Headquarters of the Army, A. G. O*, July 19, 1889.

PROMOTION.

EWING, CHARLES B., *Assistant Surgeon.*—To be Assistant Surgeon, with the rank of Captain, July 5, 1889, after five years' service, in accordance with the Act of June 23, 1874.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, AUGUST 10, 1889. No. 6.

ORIGINAL ARTICLES.

HYDRONEPHROSIS AND RENAL ATROPHY; ESPECIALLY AS RESULTING FROM FUNCTIONAL DISTURBANCES OF MICTURITION.

BY ROBERT T. EDES, M.D.,

OF WASHINGTON, D. C.,

FORMERLY PROFESSOR OF MATERIA MEDICA AND JACKSON PROFESSOR OF CLINICAL MEDICINE IN HARVARD UNIVERSITY.

HYDRONEPHROSIS is a dilatation of the pelvis and calyces of the kidney from retention of the secretion. It may vary from the slightest stretching of the pelvis beyond its normal dimensions, with perhaps a slight flattening of the papillæ, up through all the stages of gradual distention of the cavity and atrophy of the renal substance, until the kidney becomes a mere shell of fibrous tissue, to which are attached a few remnants of true renal parenchyma retaining somewhat of their structure and function. This condition may affect both of the kidneys, or one of them, or in some cases only a part of one.

It is so nearly always the result of a demonstrable anatomical obstruction in the normal flow of the urine that, in the few cases in which the exact seat and nature of the obstruction cannot be discovered, it is fair to conclude that the exception does not indicate an independent pathology, but simply that hindrances may exist which are not obvious to the sound or on the dissecting table. This remark applies quite as fully to congenital as to acquired hydronephrosis.

The object of my paper is to suggest that in some of these exceptional cases the search, if prosecuted during life physiologically and clinically, will reveal causative conditions not evident upon the post-mortem table, but, notwithstanding, really sufficient for the effect produced.

The points at which obstructions may occur are many; and according to their positions will be the amount and character of the changes existing above them; not only the dilatation, which is the subject of the present paper, but the inflammatory and degenerative alterations in addition. These lesions have been carefully studied and described, and I will take but a few moments in a brief recapitulation.

The ureters may be occluded by a calculus at any point from their exit from the pelvis to their entry into the bladder.

Wounds or blows on the back may cause compression of the ureters by means of hemorrhagic or inflammatory effusions.

An obstacle may also exist anywhere in their length in the form of a valve or fold, constituted either by the mucous membrane or by the whole thickness of the tube. Such a valve, although retaining the secretion most of the time, may be pervious under some states of distention or position; and in this way are formed the so-called intermitting hydronephroses. Folds or kinks existing in the ureters have long been recognized as obstructions, but it is possible in some cases that these may be, in part at least, secondary, inasmuch as when a hydronephrosis occurs from other causes which may be temporary, the ureter is not only dilated but also lengthened, and is obliged to form a fold in order to accommodate itself to the surrounding parts. They are frequently, however, of such form and in such numbers that no such explanation is admissible.

The ureters may be congenitally impervious through the whole or in any part of their course. (*Trans. Path. Soc. London*, xv.; *Bull. Soc. Anat. de Paris*, 1867, xxxi. 11, 305.) They may have no opening into the bladder or even attachment to it. (*Med. Times and Gaz.*, 1876, i. 546.) In some such cases there is an attachment to the rectum but without an opening into it. (Gerster: *N. Y. Med. Journal*, 1878, xxviii. 511.) When arrested or irregular development of this kind occurs in the ureters, it is not uncommon, in fact usual, to find associated with it other deformities, frequently of the intestinal canal, but often of entirely separate regions; as, for instance, the hands and feet, showing a tendency in this direction more than local. There have been instances where a woman has borne several hydronephrotic children in succession.

Whenever the obstruction exists long enough there will be a dilatation of the parts above, not necessarily everywhere equal, since the ureters differ in density and in the amount of outside support they receive at different parts of their course. It is not unusual to find in the course of a ureter which is elsewhere considerably dilated, points at which it retains its normal calibre. One of these points is likely to be found just where the pelvis of the kidney joins or becomes the ureter.

Compression of the ureters may be caused by bands of adhesions and in a few cases by a branch of the renal artery passing across them.

Among the more common external obstacles are to be found pelvic tumors and in particular cancer of the uterus. Displacement of the uterus, and in particular prolapse, can have this effect by twisting and dragging on the ureters.

The brim of the true pelvis, where the ureter makes a somewhat abrupt turn, and is especially liable to compression in passing from the abdominal cavity down behind the bladder, may cause an obstruction to the flow of urine, as will be shown by the difference of calibre, the tubes being dilated above and normal below. (*Medical Record*, 1887, xxxii. 734.)

As we come lower, omitting the bladder itself, which will be more fully discussed later, we may find the obstacles where the urethra leaves the bladder. This may be absolutely impervious, there being no orifice whatever, its proper position being indicated by a papilla (Billard: *Maladies des Nouveau nés;* Lehmann: *Nederland. Weekblad.*, 1853, No. 12); or there may be an adhesion of the sides of the urethra in this region too strong to be overcome by the pressure of urine, but yet easily broken up by an instrument passed in the usual way, which relieves the distended bladder and removes its cause, or cutting may be necessary. (Lamotte: *Traite des Accouchements;* Smellie's *Midwifery.*) In other cases nearly the whole urethra may be obliterated or wanting (Lehmann, loc. cit.). It may, like the ureters, be obstructed by a valve of mucous membrane. (*Bull. Soc. Anat. de Paris*, 1869, p. 130.)

In the adult the hypertrophied prostate is a not infrequent obstacle, and gives rise to an incipient or moderate bilateral hydronephrosis, as in the specimen just shown by me,[1] and in one by Dr. Prentiss (*Maryland Medical Journal*, April, 1883), and in many others too numerous to quote.

The function of the kidneys may not be seriously disturbed for a long while.

If a cystitis is added, as it is likely to be, we may then have, not a simple dilatation of the passages, but, from the fact that it is an inflammatory urine which is backed up into the kidneys, a pyo- instead of a hydro-nephrosis.

This list is to be extended by the mention of strictures of the urethra, of which there are several specimens in the Army Medical Museum, and of papillomata in the neck of the bladder.

Finally, the prepuce may present an efficient obstacle in the form of a phimosis, although the irritation of an adherent foreskin may lead to hydronephrosis by another chain of causation, as will be seen later on.

Many of the conditions mentioned can, of course, exist only in the fœtus or the newborn. Where a sufficient amount of depuration of the blood can be carried on by the circulation of the mother without reference to the activity of the fœtal organs, one or both kidneys may, even if entirely obstructed, continue to grow into the enormous tumors of this kind sometimes met with. A certain amount of time is requisite for the development of an extreme degree of hydronephrosis. It is a process of growth and not simply one of distention, and since after separation from the mother an absolutely complete occlusion of both ureters in the child must lead to death by uræmia before the dilatation can reach its extremest limits, we meet with the most striking examples of double hydronephrosis in connection with impervious urinary passages only in the fœtus or the newly born. The abdominal swelling in some of these cases of congenital hydronephrosis may be so great as to constitute a serious hindrance to delivery or, on the other hand, the pressure during delivery may be so great as to force a passage of the urine in spite of the resistance and empty the sac.

In adults an absolutely impermeable obstruction may exist upon one side and a slight or moderate hydronephrosis be formed in consequence, but, when the dilatation is bilateral or when it is extreme on one side, it must have been the result of an obstacle sufficient to increase the pressure under which the urine was secreted during a long time, but not sufficient entirely to stop it at once. The stoppage may finally become an absolute one, but cannot have been so from the beginning.

It is a curious fact that the amount of urine passed against a certain degree of back-pressure instead of being diminished, as we should naturally expect from a knowledge of the physical laws governing this secretion, is increased. The back-pressure, when not too great, seems to act as a stimulant to the secreting structure. If, however, it gets beyond this point, the secretion obeys the ordinary law of physics and takes place more slowly.

After the consideration of these and all similar causes for hydronephrosis, we are likely to meet with cases which are not to be explained thereby. My former instructor, Prof. J. B. S. Jackson, went so far as to say that in a large proportion of cases, so far as he had seen, no cause whatever could be assigned. We may accept, as expressing the general conclusion in the matter, the words of Roberts, who says, "There are cases which must at present be regarded as mechanically inexplicable." I propose now to examine a case or two of my own with reference to the causation and compare them with a few observations I have been able to find in medical literature.

Case I.—A boy, aged five, was seen by me in December, 1882, with my friend Dr. Gilbert, of Dorchester. He looked rather less robust than his younger brother and sister. He had always been

[1] To the Medical Society of the District of Columbia.

in the habit of wetting his bed and clothes. Recently his habits had improved, although he still passed a small amount of urine in his clothes. He did not, however, entirely empty his bladder in this way, as his mother said he could always pass water whenever they tried him. There was no difficulty in micturition. He passed a full stream. The daily quantity was considerably increased and was of low specific gravity with a small amount of albumin and a slight sediment of small cells, but no casts. Two years later the urine was still lighter and it contained albumin, but no casts. A short time before his death he had several attacks of retention of urine. He had headache for a month or two, and his death was immediately preceded by convulsions.

At the *autopsy* the body was found emaciated. The heart was hypertrophied, especially the left ventricle. The right kidney was represented by the dilated pelvis and a small nodule of secreting structure at one end and a few thin pieces elsewhere; right ureter dilated. The left kidney somewhat atrophied, mottled with yellow, lobulated, capsule adherent, pelvis and ureter slightly dilated, but much less than right. Bladder large, the walls more trabeculated than would be expected in a child of his age. No obstruction anywhere in ureters found. Free passage of water into bladder and free passage of sound in either direction. Urethra free to sound in either direction.

The next case lacks the confirmatory evidence of a post-mortem but presents what is better, the result of treatment directed to the relief of the causative condition.

Case II.—A rather delicate girl, aged three, was seen by me in consultation with Dr. Rice, of Grafton, Mass., in January, 1886. She had had a convulsion in the previous July and some feverish attacks since. She had passed urine in large quantity and with some effort for some months, and these were all the obvious symptoms. The urine was of low specific gravity and contained a large trace of albumin with pus, blood, epithelium from the neck of the bladder, renal epithelium, and some casts. A previous examination had discovered some epithelium from the pelvis of the kidneys. She was placed on the benzoate of lithium, with which her general condition improved, and she went through the night without passing water, but the albumin, pus, and casts remained, and were noted on several examinations up to March 7th. On the 8th the bladder and urethra were examined under ether. She passed a full stream of urine and a large bougie entered the bladder without difficulty. A probe detected a little roughness (trabeculation?) at times, but nothing more. On the 26th of March her mother wrote to me that she had seemed much better, appetite very much improved, and since the examination *decided decrease in the effort to pass water.*

The next examination of urine, of which I have a record, shows there was a deposit of pus and some albumin present, but no casts were found after a somewhat prolonged search and only a few large cells.

The urine of June the 14th was opalescent and deposited only a flocculent stratum of pus. One hyaline cast of medium size was found after searching a number of drops. On the 15th a large taper-pointed catheter was introduced into the urethra for puposes of dilatation, and the urine drawn contained neither pus nor casts, and only a small amount of albumin. On the 23d there were a few scattered leucocytes and no casts. Some time in the winter of 1887–8 the urine contained a trace of albumin, but in July, 1888, the attending physician writes that "It is free from albumsn and the patient is the picture of health."

If we take into consideration cases where hydronephrosis coexists with thickened bladder and a severe chronic cystitis, and where the dilatation is fairly referable to the increased frequency of micturition and the spasmodic contraction of the bladder, we can find a considerable number.

Case III.—In a case under my own observation (seen with my friend, the late Dr. Arnold, of Roxbury, in its last stages), a boy had attacks of dysuria from irritability of the neck of the bladder, and probably cystitis, from the age of six to nine. For some time before his death the urine was pale, scanty, purulent, and ammoniacal. He died with uræmic symptoms. The bladder was thickened and the ureters dilated. The right kidney was represented by a nodule the size of a pea on the outside of the membranous bag. There remained of the left kidney one round mass at the lower end three-quarters of an inch in diameter, and two or three other smaller ones.

I think we have in the first two of these cases a complete and a fortunately incomplete instance of the class recognized by all writers on this subject as "mechanically inexplicable"; inexplicable—that is, if we regard only the conditions found after death or by surgical examination, since we find a hydronephrosis with indications of increased work on the part of the bladder, but the passages everywhere freely permeable to instruments in either direction; *not* altogether inexplicable, if we regard the action of the bladder and the function of micturition.

The amount of back-pressure in the kidneys required to produce a complete compression of the secretion is estimated at about one and six-tenths inches of mercury, while less than half an inch will greatly impair it.[1] Since, then, in most cases of hydronephrosis the secretion is not checked, but the contrary, we may safely say that a very small amount of back-pressure in the bladder, if constant or frequently repeated, is sufficient, after a time, to produce slighter grades of hydronephrosis with consequent destruction of kidney substance.

Normally, of course, there is little pressure in the bladder most of the time. Once emptied, it fills

[1] Wundt: Physiologie des Menschen, p. 434. Quoted by James: Physiological and Clinical Studies, Edinburgh, 1888.

again with urine coming down the ureters, partly perhaps by hydraulic pressure, but largely by the peristaltic movements analogous to those by which the intestinal contents are propelled.

To this there is little or no resistance on the part of the bladder until a certain degree of distention is reached, varying, not only according to its total capacity, but according to its irritability, when it is emptied by a contraction of one set of muscles and relaxation of their opponents.

It is stated that the detrusor urinæ is able to overcome the resistance of the sphincter vesicæ, but it comes within the personal experience of everyone who has been obliged by circumstances to delay the evacuation of the bladder after it has become overfull, that something more than overcoming a passive resistance is necessary in the act of micturition. There must be a simultaneous and harmonious relaxation of the sphincter as well as stimulation of the detrusor. In this respect micturition may be said to resemble vomiting, where efforts of the abdominal muscles are unable to evacuate the stomach until the cardiac orifice relaxes.

The function of the urinary bladder in receiving and discharging the urine at more or less regular intervals is not a purely passive one. It should be a pump as well as a reservoir. Its proper action in this way depends on a proper relationship between the forces that propel and those that restrain its contents, and when these forces are so disordered that it fails to perform its function, or performs it insufficiently, then more work is thrown upon the other propelling forces. These are: first, the pressure under which the urine is secreted, which, as we have seen, is but slight, since half an inch of mercury pressure will materially impair it; and, secondly, the peristaltic movements of the ureters.

During the normal act of micturition no urine can, of course, enter the bladder from the ureters, but since the emptying of the bladder occupies so short a time no harm is done. The amount of urine which accumulates in the ureters during this interval is too small to distend them beyond the proper limits. If, however, the contractions be very frequent and long continued there will be enough accumulation of urine in the ureters to cause their dilatation, and, subsequently, that of the kidneys This dilatation, by weakening the walls of the ureters, will naturally tend to increase rather than decrease. Such frequent contractions result, as we well know, from various sources of irritation in the urinary tract, but especially from inflammation of the bladder itself, or of the urethra.

Suppose, now, on the other hand, the detrusor to be weakened relatively to the sphincter, or, what amounts to the same thing, the resistance of the sphincter to be increased, we may have a considerable accumulation of urine taking place against the constant elastic pressure of the bladder which is not, however, sufficient to empty it, and allow the flow from the ureters to go on again without resistance. We then have the condition of incontinence from retention—*i. e.*, a bladder full to overflowing, so often seen in the old, usually in connection with enlarged prostate, but not common in the young. The kidneys and ureters are thus working against a pressure, never very great perhaps, but always above the normal, exactly the condition to produce a gradual distention. If the voluntary muscles of the abdomen are called upon to assist the contractions of the bladder, the matter is made worse rather than better, for they cannot exercise so equal a pressure in every direction as the constrictors of the bladder itself, and the entrance to the ureters is not guarded, under the circumstances, as in the normal condition, by the contraction of the fibres immediately surrounding them. Urine may thus be forced upward as well as downward. The absence of the valvular condition of the entrance of the ureters into the bladder is expressly noted in two of the subsequent cases of paralysis of the bladder.

It will, of course, be understood that the amount of pressure required to produce dilatation in the course of weeks or months is an entirely different amount from that which would be necessary suddenly to dilate the organs to the size they may attain even in the more moderate cases of hydronephrosis. In fact, it would probably be impossible to arrive at this state of things by any rapid process.

Hydronephrosis, then, may take its rise in two distinct forms of faulty innervation, paralysis and spasm. This origin is not fully recognized in medical literature, but a few cases may be quoted in support of my view.

Augè (*Thèse de Montpellier*, 1878) reports a case of hydronephrosis from paralysis of the bladder, of which, however, the clinical details are too scanty to make it of much value for our purpose. The bladder was greatly dilated, it was thin, and the mucous membrane injected and punctated. The ureters were much dilated and the inferior orifices opened. The pelves of the kidneys were dilated and the tissues progressing toward atrophy.

The following somewhat resembles the first of mine. Bernard (*Journ. Sc. Méd.*, Lille, 1881, p. 546) describes the case of a child, aged thirteen, who had incontinence of urine, wetting the bed, and passing water into his clothes during the day; he could pass water whenever he pleased, with some difficulty, the jet being short, and he being obliged to contract energetically the abdominal muscles. When sounded, the bladder was found to contain a considerable quantity of urine, but there was no obstacle to catheterism, and no calculus. The mus-

culi recti abdominis were hypertrophied. There was a large quantity (three litres) of urine passed, which deposited muco-pus. After death the bladder was found to contain urine, pus, and blood, and was as large as the fist. Ureters dilated. Of the left kidney the structure was entirely gone; in the right the changes were less advanced, but there were abscesses. The ureters were without the usual valvular opening into the bladder, being without any intra-parietal portion. There was thickening of the walls of the bladder, and slight cystitis, but the urethra was normal.

James (*op. cit.*, p. 42) reports the following: A child had, at three, phimosis as the result of an injury. After this had been "pricked by a doctor," the swelling got better, and he seemed nothing the worse. He had then no incontinence. The incontinence began at the age of four. After this a feverish attack which weakened him, and, on admission to the infirmary at the age of eight, he looked thin and weakly. The prepuce was contracted and almost completely adherent to the glans. No pain, but great incontinence. There was increased frequency of micturition, often three or four times in an hour. Only a few drops of urine were passed at a time, and the bladder was never distended. The quantity of urine was probably increased, and it was pale, with a small amount of pus and renal cells. Circumcision gave temporary relief, but he finally died comatose.

The bladder was somewhat contracted, and its walls thickened.

There was no cystitis, but great roughness, owing to the hypertrophied muscular fasciculi and diverticula. The cavity of the bladder, when distended, was smaller than natural, and the walls about a quarter of an inch thick. There was no stricture in the urethra, and the openings of the ureters through the bladder-wall were normally patent. Both ureters were greatly dilated in their entire length; both kidneys were hydronephrotic.

The author remarks that this is one of three similar cases, in the other two of which the cause of the urinary irritation was the condition of the prepuce. He also mentioned other cases where incontinence, associated with an abnormally light urine, was relieved by circumcision.

The following references belong to cases which may have had something of this character, but in which the clinical details are not sufficient to enable us to classify them with certainty.

A case read by Dr. Acker to the Medical Society of the District of Columbia, on February 13, 1889: A child of five had phimosis, but was said always to pass a good stream. The urine was said to be normal, but latterly profuse. Death from tuberculosis. The bladder was thickened, and the ureters and pelves of the kidney slightly dilated.

Webster (*U. S. Med. and Surg. Journal*, June, 1835).

Ramsbotham (*Proc. Path. Soc. London*, 1848–49, p. 75).

Little (*Path. Trans.*, 1861–62).

Broadbent (*Path. Trans.*, xvi. p. 165). The reporter of this last case thinks there may have been a valve in the urethra because one was found in the ureter.

There is a point in the first one of my cases to which I should like to call attention, although not intimately connected with the subject of the paper —that is, the occurrence of hypertrophy of the heart in connection with a purely local disease of the kidneys. This has been noted in other cases, some of which I have come across in consulting the literature of the subject without this special object in view. It has occurred in cases of traumatic origin.

These facts are not in harmony with the theories largely held in regard to the connection of cardiac and renal disease, nor indeed with that which I have myself advocated, to the effect that this connection consists in a common dependence on a primary condition of the whole arterial system, at first functional, and afterward structural. They seem to show that, sometimes at least, the kidney lesion may be directly causative of the cardiac change, and without any intervention of arterial degeneration.

The following report cases of the kind:

Footner (*British Med. Journal*, 1878, xi. 57).

Weill (*Mém. et Comptes Rendus de Soc. de Méd. de Lyon*, xxiii. Pt. 2).

Soller (*Lyon Méd.*, vol. xxxv. p. 233).

Is it not possible that some cases of interstitial nephritis in the young, even when they are accompanied by hypertrophy of the heart and by the other symptoms usually found in older persons, may originate in some local trouble, and not be so closely connected with a constitutional affection as those with which we are more familiar in persons in middle life? Certainly the causes to which we attribute, so far as we can, chronic interstitial nephritis are less operative in the young.

It seems to me not unreasonable to suppose that even that quite slight obstruction to the flow of urine may, by the mechanism described above, and without producing more symptoms than can easily be overlooked, set up an amount of renal irritation that will in time run into chronic interstitial nephritis; and that the back-pressure may be so slight as to fail to dilate the ureters and exert itself solely on the renal substance. This, I admit, is pushing my doctrine to its extreme limits and beyond the bounds of demonstration, but I offer the suggestion for what it is worth.

THE INFLUENCE OF CLIMATE AND SEASON UPON THE MANIFESTATION OF NORMAL AND ABNORMAL NERVOUS ACTIVITY.[1]

BY W. B. PLATT, M.D.,
OF BALTIMORE, MD.

WHEN we reflect that all intelligent—that is, co-ordinated—muscular movement, is dependent upon nervous impulses, and that without muscle contraction we have no possible way of manifesting life, much less intelligence, it is evident that the nervous centres should be placed under the most favorable influences to secure the greatest benefit to the individual and to society. The conditions which affect and direct action, are climate, race, and environment. We are, moreover, all aware how large a share climate is believed to have in the production of both race and environment. The individual who is able to rise above the most unfavorable conditions involving all three of these, and excel men of prominence who have attained their position under circumstances the most favorable, may be left out of our calculation. He so nearly escapes the laws affecting large bodies of his fellow-men as to entitle him to be called a genius.

We place *climate* first of all, since it is that which, acting through generations, is believed to aid so largely in establishing race, which helps to alter environment—that is to say, institutions—and which may be in part itself determined by the physical characteristics of the region affected.

We may measure normal nervous activity by the quantity or quality of its products, or, better, by both. To have something tangible we must take the products of a given State and compare them with those of other nations or states in amount and kind. There is hardly a country in the world where to-day such a comparison is fair unless it be between different portions of our own, making due allowance for such race differences as exist.

This great fact of race difference is constantly held before us as the cause of difference in production. The Caucasian races are more easily compared than others because they alone show a tendency to produce more than they can consume, to an advancement in science, art, inventions, and to constant accretions of capital.

The complexity of the subject is enormous. To single out one factor, such as climate, to measure and weigh its force apart from concurrent forces, would require a volume. The concrete fact, however, remains, that the world over, in cool not cold climates, at moderate elevations above the sea (within 1000 feet) we find in its greatest perfection, that constantly acting, intelligent nervous force which produces greater results in all fields than in warmer or colder regions.

That climate and season have a powerful influence for good and evil upon the organs of respiration and circulation has long been recognized, but that it has also an influence in certain definite directions upon the nervous system has been pointed out by only a few observers and recently, and has been almost lost sight of in the labors of this and kindred associations. The reason is not far to seek, since the relation of cause and effect is not as apparent as in the case of the thoracic viscera, and the difficulty of isolating their effect is greater in the case of neuroses. Some of the visible effects upon the nervous activity of individuals or nations, of climate and season, are only visible after generations or years, others may be noticed in weeks or months.

We must limit our inquiry to a few distinct types of nervous derangement characterized by striking evident phenomena, where we expect to show that a definite causal relation exists between climate and season and such nervous morbid action as is expressed in chorea, acute polio-myelitis of children, suicidal tendency, and neurasthenia. Here, also, might be included some of the peripheral neuralgias.

CHOREA.—In spite of the experiments of Brown-Séquard, who proved that in dogs the choreiform phenomena were probably due to some lesion in the spinal cord, later investigations point to the brain itself as the seat of the disease in man. Without going into the anatomical appearances sometimes found, how fright can be a direct cause of chorea, nor what the real relation of endocarditis to chorea is, we will look into the connection between climate and season to the disease in question. Weir Mitchell's and Gerhard's studies are the only ones where anything more than mention has been made of the subject. They showed conclusively, from a study of 170 cases of separate attacks of chorea, that it is far more common in cool than in warmer climates. In Baltimore, where more than 10,000 cases of all kinds have come under my observation at the Garrett Free Dispensary, I have not had 25 cases of chorea. Of this small number not one was black.

Of Dr. Mitchell's cases the number of attacks increased by an enormous bound from February to March, when it reached its maximum of 35, falling to 15 in April, rising again to about 18 in May, and continuing thus until July, when it slowly fell until December. These all occurred in the latitude of Philadelphia, and extended over a period of four years. The attacks appeared to have no relation to the rise or fall of the barometer, to the rain-fall, or to the thermometer, excepting as the relative rise is greater in the spring than in other months. The number of attacks did, however, show a remarkable coincidence with the number of storm-centres passing

[1] Read before the American Climatological Association, June 29, 1889.

within 750 miles of Philadelphia. The observations on this point extended over a period of two years, and the curves of the number of storm-centres and that of the attacks of chorea are almost parallel until the month of September.

As we have already noted that the chorea curve had no relation to that of temperature or atmospheric pressure at the place of occurrence of attacks, we must conclude that some other causes than these are in operation to excite the attacks in question. We might define chorea as a disease of childhood and youth, characterized by chronic, intermittent, muscular twitchings, without loss of consciousness, often accompanied by endocarditis, and caused by an irritation of the cerebral motor ganglia. It is a disease of cities rather than of the country, of whites rather than of blacks, of females rather than of males, of the spring months, and of cool climates.

Dr. J. K. Mitchell informs me that he investigated the relation of attacks of *apoplexy* to season at one time, expecting confidently to find some relation. He found, however, nothing in the least to indicate that any connection existed between them.

In regard to *acute polio-myelitis* of children, or *infantile paralysis*, Wharton Sinkler, of Philadelphia, found it immensely more frequent in that city in the hot than in the cooler months. The curve of the number of cases rises rapidly from May to the first part of August, falling abruptly to the first week in September, running then in an even course until November, when it fell to its lowest point in December. While its curvè does not run exactly parallel to that of the temperature, the main course is very near it. Just as in cholera infantum and the diarrhœal diseases of children where the mortality and the degree of heat are closely related.

Concerning *suicide*, we see at a glance that race has much to do with its frequency. Those who believe that race and the peculiarities which cause the difference in races, are due to climate, will find support in the fact that negroes, for instance, very seldom commit suicide; carrying into cooler climates a peculiarity acquired by residence for many generations in a hot climate.

Savages have such an immunity from suicidal impulse, that we may in general define it as one of the diseases incident to civilization, one of the throes of the human race, painfully passing through stages of evolution which bring with them burdens too heavy to be borne.

The influence of climate and season upon suicide is most remarkable. S. A. Hill, in his *Statistics of an Indian Province*, shows that suicides, violent deaths, and wounds, are at a minimum in the colder months, increase in frequency during the hot and dry season, and remain high during the rainy season. The irritability of temper caused by prolonged heat and moisture is suggested by him as a reason. The same writer says that December is the month of most frequent conception.

The literature of suicide is enormous, as anyone who looks up the subject for any point connected with it will see. Dr. Pilgrim, in the July number of the *Popular Science Monthly*, says, "Suicides are most frequent in April, May and June. July and September have a good proportion, while they are fewest in October and November." M. Guerry is quoted as proving that some days of the month and week and some hours of the day are more often chosen than others for suicide. He found the greater number occurred during the first ten days of the month, due probably to the fact that wages were then received and spent more often than later in the month; their receipt being followed by dissipation, reaction, and self-destruction. There were likewise more cases occurring from Monday to Thursday. A French writer on the subject, Brierre de Boismont, shows that of 1993 suicides in Paris, most of them occurred between 6 A. M. and noon; thereafter regularly declining in frequency until just before sunrise. They are also said to be especially frequent shortly before breakfast-time, and very seldom just after dinner.

There are also epidemics of suicide due to social causes, which might as well be called "social nerve-storms." In Versailles, for instance, there were in one year 1300 suicides. The statistics of lunatic asylums show at certain times a much larger number of admissions of patients with suicidal tendencies than at others. Dr. Pilgrim quotes from the report of the State Lunatic Asylum of New York, showing that in July, 1850, there were admitted 28 suicidal patients. In that month, of 44 patients altogether admitted, 19 of them were suicidal. From the 12th to the 22d of the month there were 14 attempts to commit suicide among 8 persons.

To estimate correctly the influence of any one element, such as climate or season, we must see what other factors there are and eliminate these if possible. A recent writer, in an article entitled "Baits for Suicide," deplores the influence of a certain class of literature upon those likely liable to suicidal impulses, and dwells particularly upon two well-known works of fiction, *Lady Audley's Secret*, and *Aurora Floyd*.

One factor is age. Forbes Winslow (*Journal Psych. Medic.*) shows that the tendency to suicide first appears at from 10 to 15 years of age, is most frequent among males from 55 to 65, and among females from 65 to 75, in Great Britain. An imperfect education appears to be worse in its suicidal tendency than ignorance. Whatever we may think of the proverb that "Ignorance is the mother of devotion," we cannot call suicide a child of hers,

since suicide is absolutely less prevalent among the illiterate than among those who are more or less educated. Radcliffe, in "English Suicide Fields," etc. (*Journal Psych. Medic.*, vol. ii.) holds that nowhere is this relation of suicide to ignorance more manifest than in Great Britain; being more prevalent in the more highly educated districts. Farr attributes this with justice, not to the advancement of science and knowledge, but to the development of small trades, such as that of tailoring, shoemaking, and the like.

Sex is another important factor. In New York, in 1883, there were 161 suicides; of these, there were 134 males and but 27 females. Nationality plays a curious part, for of these, 70 were among the Germans, who, as far as worldly prosperity is concerned, are more prosperous than the other great immigrant class, the Irish. Religion and the lack of it have an important bearing. Except among the absolutely insane, a belief in a future life of reward or punishment, exerts a decided restraining influence on the tendency to suicide. Without this, suicide is a logical and welcome means of escape from hopeless despair, misery, or disgrace.

Well-marked insanity is another and with us the most important of influences in producing suicide, although, as we shall see, this in turn is greatly influenced by climate. In England, in 1865, there were 1600 suicides; most of these attributed to insanity. How many more there might have been may be seen from the fact, that during this year there were in insane asylums 6096 patients with suicidal tendencies. The English believe that most of their suicides are to be found among the insane, and fewer due to despair, remorse, and sense of disgrace, which act as powerful motives on the Continent. Aside from well-marked insanity, in the popular acceptation of the term, the passions are the most important direct cause of suicide. Imitation is a most important exciting element in suicide. The mere mention of some remarkable or striking mode of self-destruction, is sure to be followed by a number of similar cases over a large area, and this area would, we believe, be found to correspond pretty closely to the region reached by the newspaper account of the case in question. It is well known that melancholic insane are the most suicidal in their tendency. In four years there were 2106 patients in the Utica Asylum for the Insane. There were 512 cases of melancholia, and of these there were 130 suicidal patients, or 35 per cent. This is about the usual per cent. There were but 50 cases among the remaining inmates.

Among suicides from disgrace, military sentiment, etc., may be mentioned the case of the son of the famous Marshal Wrangel, who, finding that his son, an officer in the army, had utterly lost caste in consequence of his misdeeds, paid all his debts, and said "Now there is but one thing further for you to do, you will find what you need in the next room," referring to a loaded pistol which he had laid upon the table, and the son, truer to military tradition at last than at the first, took the hint without delay. The instance of Rudolph of Austria is too well known to require further comment as a result of passion and mistaken sentiment. When, however, we take large areas among various nations and find that suicide is far more common in cool than in warmer climates, we are compelled to admit that climate is one great causal factor. Explain it as we will, call its influence direct or indirect, there are far more suicides in northern than in southern countries. Dr. Grissom, of North Carolina, in whose asylum there are on an average 200 insane, has never had a suicide, and we think no one would venture to believe that institutions for the insane have better management or attendance in the South than in the North. He (Dr. Grissom) is said to have attributed this remarkable immunity to the restraint system. The statistics of the Maryland Hospital for the Insane, near Baltimore, whose able and intelligent Superintendent, Dr. Gundry, has long since abolished restraint, and where there are at present 430 inmates, with an average of from 350 to 400, for five years, has had but one suicide in ten years. It may here be said in respect to nationality that negroes, in spite of their hopelessly inferior social position, and who seem condemned to servitude, if not hard labor all their days, seldom destroy themselves.

It is the testimony of numerous observers—Quetelet, Tissot, Winslow-Hawkins, Gundry—French, English and American, that suicide is more common north than south, and more common in warm than in the colder months. Of the warmer months, the months of April, May, and June certainly predispose to or excite to suicide.

The fact that more cases of the so-called *neurasthenia* occur in the spring months, than at any other time of the year, must be evident to every general practitioner or specialist who has to do with the class in which these cases arise. Those students who habitually omit to take arm exercise, furnish a large contingent. I have seldom seen a case of neurasthenia in a man who kept reasonable hours, avoided excess of stimulants, narcotics, or sexual indulgence, and who took some form of regular arm exercise.

Such a man will become so fatigued when he enters the confines of mental overwork as to be incapable of it. We find those who are ill-balanced morally, by far the most sensitive to influences that the normal man easily withstands.

The Elmira Reformatory, of New York, with its

1000 inmates between the ages of eighteen and thirty—all criminals—is a fruitful field of observation of nervous instability, and I cannot improve upon the remarks of Dr. H. D. Wey, who has kindly replied to my inquiries as follows:

"It is a well-known fact that 'nerve storms' or ascending nerve currents are encountered every spring. There is no fixed time for their appearance, although they usually manifest themselves either in February or March. This year they appeared in the latter part of January. Whether there is any connection between their early manifestation and the unusually forward spring, I cannot positively say; but reasoning inferentially, it would seem as if there was.

"The old saying runs, that 'In the spring of the year the necks of the bucks begin to swell.' It is very seldom that our annual attack of 'cussedness' comes on as late as the month of April. It seems to occur coincident with the renewal of life in the vegetable kingdom and has never been noted in any degree during the decline of vegetation in the fall. It manifests itself in irascibility. and a disposition to break in upon and infringe the rules of discipline. The animal nature seems to come to the front. Two men may be working quietly side by side, when without any provocation, one man will fell the other to the ground, possibly inflicting serious injury.

"Assaults upon officers are more common than at any other season. In 1880, there were two suicides and two homicides, all within a period of two months. There seemed to be no other reason for the tragedies than that they were the outcome of the nerve tension incident to the season of spring. At this time it is necessary to observe unusual vigilance. None recognize this fact better than old officers. School-work seems to drag, and it calls for unusual effort for the men to apply themselves to their mental tasks. Shop-task work is performed with greater difficulty and frauds in its execution are constantly cropping out. Such, in brief, are the phenomena noted in general. In the individual can be studied the conflict going on between two natures; a Dr.-Jekyll-and-Mr.-Hyde contest, in miniature.

"In everyday life, *Monday* morning is the most troublesome period of the *week*. The quietude of Sunday, the absence of customary duties, and the communing of each man with himself seem to bring to the surface on the following day all that has been held back and repressed during the week. In view of this it is sought to impose upon each man as much Sunday occupation as is consistent with the day, religious services for all denominations, Protestant, Romish, and Hebrew, examinations in English literature for the most advanced, popular talks and lectures by the best talent we can obtain. All that is emotional or that appeals simply to sentimentality is avoided, and for this we have been criticised as Godless.

"Regarding insanity, I cannot say I have noted its presence to a greater degree in the spring than at any other season of the year. When it does occur in the spring it would seem as if it must be looked upon as the giving away of a mind that is non-resistive, and unable to participate in the strain to which the nervous system is being subjected. I have noted that with a rising barometer the men are buoyant and elastic, and perform their tasks without seeming effort and irritation; but when it is falling or depressed, they seem sluggish and heavy, and respond badly or slowly to stimulation.

"I omitted to mention that during the spring 'climacteric' the proddings of sexual disturbance are apparent. Many of the men will have sexual sprees (masturbation) that bring them to a conditon resembling that of the 'fretful porcupine,' when they are in a condition to cast their quills at any one who may provoke or cross them. These sprees may be compared to the outbreaks of the paroxysmal drinker who carries his excesses to a point where the nervous system gives way under the strain and fails to assist him in his dissipation. A man will masturbate to that point where he is in a tremor, unable to eat or sleep, and on the border-land between sanity and insanity. Then we will have to take him in hand, and build him up as would be necessary in the case of a man recovering from an attack of alcoholism. These cases are, however, occurring at all seasons of the year."

If then we have shown that neurasthenia and suicide are more frequent in certain months of the year in various countries than in other months, when *á priori* they should be more frequent, shall we then conclude that temperature or its variation has anything to do with it? We are compelled to say that we do not think it has of itself much to do with the outbreaks or epidemics which we often see at this time. Moreover, we must further say that we believe no one knows what these influences are which disturb the equilibrium of the emotional nature. All we have been able to do is to call attention to the fact that climate and season do have a marked influence upon the manifestation of nervous activity in the various ways already indicated.

A CASE OF PERIOSTITIS, FOLLOWED BY OSTEO-MYELITIS, PYÆMIA, AND DEATH.

By C. M. HAY, M.D.,

ASSISTANT PHYSICIAN TO THE STATE INSANE ASYLUM, MORRISTOWN, N. J.

The following case seems to me to present several interesting and unusual features:

P. D., aged forty-five, laborer and soldier, with no history or evidence of syphilis or tuberculosis, was in good physical condition until November, 1888, during which month he sustained a slight contusion of the left tibia, about the juncture of its middle and upper third. The nature of the injury was a contusion, and the skin was only slightly broken, if at all. This resulted in an indurative periostitis, which slowly progressed until about three inches of the periosteum were involved in the process, and there was considerable infiltration of the surrounding tissues. Under treatment this inflammation partially subsided, but continued as a chronic condition, with some swelling and tenderness. It was at this time that I first saw the man, and since then the case was under my care in the hospital wards of this institution.

At this time the patient complained of pain through the limb, and the temperature and general condition of the patient indicated the formation of pus, so that, on December 27th, a free incision was made through the thickened periosteum, the deep layers of which had broken down into pus, while there was also superficial necrosis of the bone, which, at one point, extended deeply into the bone itself, and was connected with its medulla by a sinus. The medulla was then freely laid open, a small quantity of pus evacuated, and the wound packed.

In five weeks complete granulation and cicatrization of the wound had occurred, and the patient was apparently well. He continued well for about one week, when he began to have fever of from 100° to 102° F. at night for three nights.

On February 13th, the patient suddenly had a severe chill, followed by a temperature of 106° F., and an abscess suddenly appeared at the left elbow, and rapidly increased in size. Examination at this time revealed a normal condition of the heart, lungs, and kidneys, while the liver and spleen were not enlarged. The abscess was evacuated of about eight fluid-ounces of greenish, purulent pus, antisepticized, and drained. On the 16th phlegmasia dolens of the right leg occurred, a clot being plainly felt in the femoral vein. The temperature continued typical of acute pyæmia, with abrupt and extreme fluctuations, frequent chills and sweatings, a dry, brown-coated tongue, and adynamic nervous symptoms. The patient continued to sink lower into this typhoid condition, and it was thought he would soon die.

Under the free administration of brandy, quinine, turpentine, and digitalis he continued in the same condition, with high, irregular temperature, and quick, small, wavy pulse, with occasional chills and sweatings, until the 21st, when he began slowly to improve, and on the 24th the œdema had very much decreased in the right leg, and the abscess of the left elbow was rapidly healing. The patient's appetite had improved, while the fever was lower and more regular, ranging from 99° to 102°, with occasional subnormal falls. He continued in this condition until March 4th, when he began to have more fever, and to fail more rapidly in strength.

On March 6th phlegmasia dolens of the left leg occurred. The patient suddenly complained of agonizing pain in the left thigh, and in a few minutes the left leg became almost black in color, while a clot could be felt in the vein. Œdema of the member occurred in a few hours, and soon became extreme. The temperature became higher, and traces of albumin were found in the urine. Examination of the lungs revealed signs of consolidation at both bases posteriorly, while the respiration was markedly increased in frequency. The heart-sounds were rapid and confused, with great weakness of the first sound. On March 11th a small abscess formed in the subcutaneous cellular tissue near the seat of operation. This was opened and drained. On the 16th a large amount of pus (fully two pints) was evacuated from the right thigh just below Poupart's ligament, and the abscess was dressed antiseptically, with drainage. The patient again improved somewhat until March 20th, when all his symptoms increased in gravity; fluctuating tumors appeared in both iliac regions, and the perineum and scrotum became œdematous. The urine became more albuminous; new patches of pneumonia occurred; the heart-sounds became more rapid and more irregular; respiration varied from 30 to 50 in the minute, while the temperature ranged from 96½° to 105½°, and the patient died on March 29th, after some days of low, muttering delirium, with carphologia, subsultus tendinum, and extreme nervous symptoms.

Post-mortem examination ten hours after death. The body was emaciated, and there was œdema of both ankles; the left leg was more œdematous than the right. The brain presented no special lesions, and contained no abscesses. The heart was of normal size and appearance, but, on section, the muscular substance was friable, and very pale in color There was no valvular disease, and the cavities did not appear to be dilated.

The lungs were the seat of numerous scattered patches of pneumonia. These were more numerous in the right lung than in the left, but the lower lobes posteriorly of both lungs were extensively infiltrated. The apices of both lungs were free, and, elsewhere than immediately surrounding each of these patches of consolidation the lungs were anæmic. In the right lower lobe, these pyæmic patches were older than elsewhere, and numerous small abscesses, varying in size from the head of a pin to one and a quarter inches in diameter remained. Fewer abscesses were found in the left lung, where the patches were also numerous, and seemed of recent occurrence.

The liver was symmetrically enlarged, and pale; capsule not adherent; contained no abscesses. The substance was friable, and there were numerous ashen-white patches disseminated through the substance of the organ, giving it a mottled appearance. These patches were from one to three inches in diameter, and were of various shapes.

The kidneys were enlarged; capsule not adherent, cortex not diminished. They showed the same ashen-white patches as were seen in the liver. The spleen was enlarged, capsules presented signs of recent peri-splenitis, while the interior of the organ was simply a pus cavity. The contents were liquid, of a greenish-black color, and gangrenous odor. The condition suggested multiple abscesses which had coalesced.

No gross lesions of the stomach, intestines, or pancreas were found. The arteries were healthy, as far as examined. They were in a state of contraction, and contained long fibrous coagula.

A small abscess was found on the left leg, posteriorly, and contained one fluid-ounce of purulent pus. On section, the abscess in the right thigh (which had been opened below Poupart's ligament) showed that it was very extensive, extending internally deeply under the abductor muscles, and externally beneath the deep fascia, while the femoral artery and vein, and profunda femoris, with their branches, ran free through the abscess. Instead of any reparative process, actual sloughing had occurred. From this abscess a sinus, formed between the femoral artery and vein, and posterior to both, communicated with the abscess in the iliac fossa, and this latter was found to be connected with centres of suppuration in the psoas and lumbar regions.

The veins, as we should expect, presented the most marked lesions. The superficial veins of the lower portion of the abdomen and both thighs were distended to three or four times their natural size, and formed a rich, varicose anastomosis here, and also, to a less extent, over the thorax and neck. This network of greatly distended veins contrasted

markedly with the blanched surface of the skin. The condition of the deep veins was as follows:

The right internal jugular was almost completely occluded by firm coagula, which adhered to one side of the vessel, for the distance of three inches. During that extent the vessel was greatly thickened. At the juncture of the right internal jugular and the right subclavian veins, behind one of the valves, was found a very firm thrombus. There was, however, no distinct change in the wall of the vessel at this point. Coagula, which were unusually firm, were also found in the left internal jugular and left subclavian, innominate, transverse veins, and the superior vena cava. These communicated with a similar coagulum in the right auricle, and probably occurred with death, while the one found in the internal jugular seemed to be the result of previous phlebitis. The principal lesions were in the inferior vena cava and the veins of the lower extremities.

The following veins were chiefly affected: The inferior vena cava, from the juncture of the iliacs to its juncture with the left renal vein; both common and external iliacs, and both femoral veins, with their main branches, down as far as examined below the knee. The lesions were essentially of the same nature throughout, only differing in degree. These consisted of thrombosis, partial organization of the clot, with its subsequent softening, formation of pus, with thickening of the walls and resultant ulceration of the affected veins. The right femoral vein, as it ran through the abscess below Poupart's ligament, had been converted into a fibrous cord, and the organization of the thrombus here appeared complete. The right external iliac was filled with pus and broken-down fibrinous shreds, while an opening half an inch in diameter, involving one-third of the circumference of the vein, communicated with the iliac and psoas abscesses. The right common iliac, and the inferior vena cava presented signs of acute phlebitis, and were filled with purulent pus, the line of the vessels being one ulcerating surface, while the walls of both were three or four times thicker than normal. The left external iliac vein was the seat of pyo-phlebitis, the vein being enormously distended to many times its original size, but the vessel wall was intact. The left femoral vein was thrombosed to below the knee, but softening had occurred only at a few points, and the lining of the vein was not inflamed. There was no formation of pus in any of the tissues outside the veins in the left iliac region, thigh or leg.

Longitudinal section through the left tibia showed purulent osteo-myelitis of the bone above and below the seat of operation, while at the seat of operation itself the medullary canal was filled with new bone, and for a distance of four inches the bone was perfectly healthy. There was also some serous effusion in both knee-joints, but they were not inflamed. The inguinal lymphatic glands were much enlarged on both sides, but suppuration had not occurred in or about them.

Microscopic examination of the light-colored patches in the liver and kidneys revealed amyloid degeneration, while in the latter organ the signs of acute parenchymatous nephritis were evident. Section of some of the smaller pyæmic patches showed the ordinary appearance of pneumonic consolidation, to which, however, were added capillary hemorrhages. Transverse section through one of the inflamed veins gave the ordinary appearance of acute suppurative phlebitis. The thickening of the left femoral vein, just below Poupart's ligament, was remarkable, the wall of the vein being over a quarter of an inch thick. Microscopically it was infiltrated with leucocytes, the principal thickening being in the adventitia of the vessel. The intima was entirely gone, and ordinary granulation tissue surrounded the lumen of the vessel itself. The interior was filled with pus cells, compound granule cells, shreds of fibrine, and granular matter, mixed with the coloring matter of the blood.

The above case seems of great interest in many respects. The slight nature of the traumatism, which apparently was the primary cause of all the subsequent symptoms, certainly points very clearly to the necessity of prompt treatment in all such cases. My chief reason, however, for reporting this case is the fact that acute pyæmia occurred after complete closure of the wound, and after the man had apparently recovered his usual health. The post-mortem sections of the affected bone conclusively proved that that part of the bone upon which the operation had been performed had been entirely repaired, and at the same time revealed new foci of suppurative osteo-myelitis above and below that portion of the bone. Whether these were the remains of the primary inflammation it is hard to say; that they existed at the time of operation seems improbable, on account of the rapid and complete closure of the wound and the recovery of the patient. It would certainly appear that these foci began with the subsequent evening fever, and that they were the initial lesions from which the abscess at the left elbow originated. The violent onset of the disease in its most acute type makes it probable that at this time the spleen was also the seat of pyæmic lesions, and the absence of any lung implication strengthens this view.

The manner in which the collateral circulation was established for the lower extremities, and its efficiency for such a long period of time, are worthy of note, while the very extensive secondary inflammations, which must have existed for weeks prior to death, also add interest to the case.

The sequence of events in this patient's case seems plain, provided we assume that the blood became primarily affected from the purulent osteo-myelitis, which in some manner occurred in the tibia after the closure of the wound. The condition of the spleen, as has been said, would indicate that it was next affected, and the widespread thrombosis and embolism (as evidenced by the condition of the lungs and spleen and the successive attacks of phlegmasia

dolens) seemed to have been the primary condition in the various situations in which they occurred, while the phlebitis was undoubtedly secondary. This was very clearly indicated by the acute attacks of phlegmasia dolens, with the subsequent formation of abscess in those situations, and also by the fact that many large veins with healthy walls were found thrombosed at the autopsy. The occurrence of phlegmasia of the left lower extremity exhibited this most markedly. Thrombosis attended by pain, cyanosis, and gradual œdema of the member occurred on March 6th, but it was not until March 20th that the condition of pyo-phlebitis of the left external iliac vein made itself manifest as a fluctuating tumor.

The recovery from the acute symptoms, and the continuance of the case as one of chronic pyæmia for such a long period of time, together with the late occurrence of septic pneumonia, justified the hope for a while of the patient's ultimate recovery, which was however speedily dismissed by the occurrence of the secondary complications already enumerated. It seemed surprising that ulcerative endocarditis did not occur in the case, when we consider the condition of the inferior vena cava itself.

In connection with the veins, I neglected to state that both the vena azygos, superior and inferior, with the intercostal and lumbar veins, were found greatly dilated.

In conclusion, my thanks and indebtedness are due to Dr. Gilbert B. Pfoutz, pathologist at this institution, for valuable aid in the microscopic study of this case.

THE PINE BELT OF NEW JERSEY—A REGION OF SANDY SOIL AND PINE FORESTS.[1]

BY ISAAC HULL PLATT, M.D.,
OF LAKEWOOD, N. J.

NEW JERSEY, though a small State, presents a diversity in its topographical and geological features. In the northern portion it is traversed by the Kittatiny and Highland ranges of hills, parts of the great Appalachian chain; the central portion is characterized by red sandstone with trap ledges, while the southern and eastern part of the State consists of level country, with a sandy soil and pine forests. Along the shore there are long stretches of shallow bays and tide marshes, and in the extreme southern portion many little rivers with wet meadows lying along their banks, but running through the interior of the State there is a strip of land about sixty miles in length and from eight to twenty miles in breadth, reaching from a few miles south of Freehold, in Monmouth County, almost to Vineland, in Cumberland County. This comprises the inland portion of the sandy tract, excluding the extreme southern portion, of which I have spoken as being damp. This region has long enjoyed a local reputation for healthfulness, and some portions have been mainly settled by people who have sought it for that reason. Its soil varies somewhat in its character, ranging from a light sandy loam to clear beach sand. Its streams, which are sufficient for drainage, have good banks which they very rarely, if ever, overflow, and there is no wet meadow. There are a few peat bogs which have been partially utilized in the cranberry culture, and also some marl beds in the northern portion, and occasionally a cedar swamp, but these features are all of very limited extent. Leaving these out of account the richest soil is a light sandy porous loam, containing about 85 per cent. of silica and only 1½ per cent. of water, while the lightest is almost pure quartz sand, 95 per cent. silica and only 0.6 per cent water.[1] Extensive pine forests are a prominent feature of this region. They have been in some places cut off or burned, and in some spots are replaced by oak and other deciduous trees, but there are enough left to make it pre-eminently a pine region. One consequence of the sandy nature of the soil is the entire absence of mud. Of course, during a rain or a thaw there is wet sand, but it is no more like mud than the wet sand of a sea beach, and within a few hours after the cessation of the rain it is dry again. Melting snow does not produce slush, except in rare cases where the snow has immediately followed a freezing rain, as the dry and thirsty soil drinks up the water as fast as the melting of the snow can produce it. I have seen eight inches of snow disappear so completely in twenty-four hours that one could walk out, "across lots," with thin shoes without moistening the feet. Owing to the coarseness of the sand there is no dust, except a slight amount in very dry weather where the roads have been covered with clay or gravel.

The importance of soil dryness as a climatic element in the prophylaxis of phthisis is too well known to need rehearsal. The researches of the elder Bowditch, Buchanan, Simon, Pepper, and others are familiar. Why soil dampness should have an influence in the production of phthisis, so out of proportion to dampness emanating from other sources, I have never seen satisfactorily explained, and it is not my purpose to attempt its explanation, but I think some figures from the vital statistics of New Jersey will help confirm the fact if any confirmation is needed.

The tract which I have described, comprising parts of the counties of Monmouth, Ocean, Burlington, Camden, and Atlantic, is coëxtensive with the townships of Howell, Jackson, Manchester, Southampton, Woodland, Shamong, Winslow, and Ham-

[1] Read before the American Climatological Association, June 24, 1888.

[1] Cook's Geology of New Jersey.

monton. In all, about 570 square miles, containing a population, according to the State census of 1885, of 14,475. According to the reports of the State Board of Health, which are carefully prepared and I believe as accurate as any statistics of the kind, the whole number of deaths in these eight townships during the six years from 1883 to 1888, inclusive, was 1057, or an average of 12.16 per thousand, a year. The number of deaths from consumption was 141, or 1.6 per thousand, a year. In the State of New Jersey, during the same period, the total mortality was 18.65 per thousand, and the mortality from consumption 2.53 per thousand, or, throwing out towns of over five thousand inhabitants, the total mortality was 15.07 per thousand, and the mortality from consumption 2.12.

	Total mortality per thousand.	Mortality from consumption per thousand.
Sandy tract	12.16	1 60
N. J. State	18 65	2.53
N. J., excluding cities	15.07	2.12

The comparatively low mortality from consumption will be rendered more striking if attention is called to the nature of the population of the region. The inhabitants may nearly all be included in two classes: the descendants of the original settlers and those who have sought this region because of its supposed healthfulness. Probably owing to the sterility of the soil, the native south Jerseyman is very poor; he resembles in many respects the poor whites of the southern States. He can in many cases neither read nor write. His surroundings are as unhygienic as poverty, ignorance, and lack of ambition can readily make them in a naturally healthy region. His home is a hovel and his food indigestible, and often insufficient and innutritious. Of course, there are exceptions, but this is the rule. Both this class and that composed of people who have come because they were in feeble health would naturally be supposed to raise the death-rate from phthisis.

The comparison with the rest of the State of New Jersey I regard as of greater importance than that with any place else, because the statistics are compiled under the same general direction and under the same rules and conditions; but it will, perhaps, be interesting to cite for comparison a few other death-rates from phthisis:

New York City	3.56
Philadelphia	3.16
Brooklyn	2.98
Boston	3.34
San Francisco	3.06
Massachusetts	2.90
New York State	2.50
London	3.20
Rural England	2.30
Switzerland	1.80
Rural Victoria (Australia)	0.87

It is to be regretted that no systematic meteorological observations have been made in this region. The nearest approach is the record of Vineland,[1] just south of the region described and in quite similar country. This for ten years from 1878 to 1888 is as follows:

Barometer, reduced to 32°,	
Mean	29.92
Maximum	30.76
Minimum	28.65
Thermometer,	
Mean	53 60°
Maximum	104.00
Minimum	—10.00
Mean relative humidity	72.2
Rainfall per annum,	
Mean	47.41
Maximum	59.99
Cloudy days, average	107.00

There is nothing very striking in this table; the mean relative humidity is moderate, therefore the climate cannot be classed as very dry. In spite, however, of the fact that by the tables the humidity does not differ materially from that of New York or Boston, the sensation of dampness is far less. In winter, the peculiarly disagreeable weather accompanying an east wind in our seaboard cities, and known as "raw," is almost unknown, and in summer, while the weather is frequently warm it is rarely sultry. The east wind even in winter loses its disagreeable character which makes it a bane to the Bostonian and New Yorker, and in warm weather is the pleasantest wind we have, coming as it does with the freshness and coolness of the sea, but deprived of its dampness by the stretch of sand and pine forest over which it has passed. Fogs are very rare. In a three years' residence at Lakewood I have not seen more than five or six, and these were dissipated a few hours after sunrise.

The village of Lakewood lies near the western border of the township of Brick in Ocean County, ten miles from the sea. It is not included in the region to which the statistics given above apply, because it is part of a statistical division extending to the seashore, and also because a large proportion of the deaths there are of patients from a distance. It is, however, practically a part of the region described, being within a mile of its border and identical with it in soil and climate, and is the only place thereabout where good accommodations can be found for sojourners. The elevation of the village above the sea level is from sixty to a hundred feet, it being situated on the southern slope of a low ridge which forms a shelter from the northerly and northwesterly winds.

[1] Vineland is almost identical in its physical features to the region under consideration. The reason of its exclusion is the existence of a strip of damp soil between.

On the north and west the village streets terminate in the pine woods which, with an occasional clearing for farming purposes, extend several miles northward and indefinitely to the west. To the south and east the country is more open, but a large portion is still covered with pines. The town is furnished with water from the Metedeconk River, which flows just to the south, and is supplied with a good system of drainage.

There is one feature of Lakewood which has not yet received the attention due it, and in fact the existence of which I have only recently become aware, and that is, a very remarkable spring about a mile from the village. It is of the class of the Poland and Bethesda springs, and has an estimated flow of from sixty to ninety gallons per minute. The following is its analysis:

Total solids . . .	grs. per gallon,		1.0260
Silica	" "	0.2098	
Sodium chloride . .	" "	0.4431	
Ferrous sulphate . .	" "	0.1107	
Calcium sulphate .	" "	0.0495	
Calcium chloride .	" "	0.0058	
Potassium chloride .	" "	0 0220	
Magnesium chloride .	" "	0.0547	
Mineral residue . .	" "		0.8956
Organic and volatile matter	" "		0.1304

The analysis of the Poland spring I will give here for comparison:

Total solids . . .	grs. per gallon,		3.6759
Sulphate of potassium	" "	0.1562	
Chloride of sodium .	" "	0.2636	
Carbonate of sodium .	" "	0.1333	
Carbonate of lime .	" "	1.2287	
Carbonate of magnesium	" "	0.5412	
Oxide of iron and aluminum	" "	traces	
Silica	" "	1.1197	
Organic and volatile matter	" "	0.2332	

It will be seen that in the quality of purity the Lakewood spring excels the Poland spring by more than three times. Accepting the views of the profession as to the value of pure spring water in the treatment of Bright's disease, as epitomized by Dr. Andrew H. Smith in his paper read before the Climatological Association last year, and in view of the undoubted benefit of the water from the Poland and other similar springs in these cases, the value of this spring can hardly be doubted. I have not yet had an opportunity to put this theroretical opinion to a clinical test, but I shall do so as soon as possible, and in view of the exceedingly clear course of reasoning by which Dr. Smith reaches his conclusions in the paper referred to, and of experience with water of similar springs I have little doubt of the result.

It is not my intention to enter into any comparison of this region with more famous health resorts. I certainly believe that the high altitude of the Engadine or Colorado has positive advantages which places near the sea level cannot possess; but there is a long list of contra-indications to the high altitude treatment, and there are many patients who cannot avail themselves of it for various reasons. To such our region offers a refuge with the very decided advantages of an exceedingly dry, porous soil, the environment of pine forest, good accommodation and easy accessibility from the great centres of population. It is most admirably situated for carrying out the idea advanced by Dr. Bowditch at our meeting last year, of residence in comparatively favorable regions near at home, where sanitaria might be established, and climatic, medical, and hygienic treatment combined without the necessity of a distant exile.

As some future time I hope to be able to give something more definite in regard to the results of treatment in this region, but as yet my observations are not sufficiently extensive or long continued. I can only say at present that it is very exceptional for a patient with bronchial or pulmonary disease not to derive some benefit greater or less from the change, and in many cases the benefit has seemed remarkable.

MEDICAL PROGRESS.

Biborate of Soda in Epilepsy.—The objections to a long-continued use of the bromides in epilepsy are well known. Substitutes are eagerly sought after. Of the biborate of soda for this purpose, Dr. J. D. Munson, Medical Superintendent of the Northern Michigan Asylum, in his last report, which we quote from the *American Lancet* for July, says:

"It has been found quite equal to the bromides in controlling the seizures. In some cases it has been found superior. It is prompt in its action, and does not affect badly the general condition, and is usually well borne after the first few doses.

"Biborate of soda tends to constrict the peripheral bloodvessels in a remarkable manner, and to this action is doubtless due its beneficial action in epilepsy. In epileptics with high arterial tension, borax is sometimes harmful, while in those with low arterial tension, but strong heart action, it is most apt to be useful."

In cases with weak heart it acts badly, probably by its vaso-motor action, obstructing still more the outward blood. Among the drawbacks to its use, he gives the following:

"Given regularly in moderate doses it is apt to affect the nutrition of the scalp, the hair becoming rough and brittle, and in one or two cases alopecia has followed. A troublesome psoriasis is occasionally induced, which, according to our experience, has not yielded readily to treatment, nor has the administration of Fowler's solution with it always prevented its appearance. In one case a suppurative inflammation of the middle ear was always induced by the use of the biborate."

He advises that the drug be never given before meals, or for long periods continuously. It is well sometimes to alternate its administration with those of the bromides.

Nephrectomy in Case of a Horseshoe Kidney.—Socin, of Bâle, performed an exploratory operation last year on a woman, aged forty-seven, who had been subject for thirty years to pains in the right hypochondrium, where a tumor had gradually formed. He aspirated, and found that the swelling contained urine; then he performed nephrotomy. Hydronephrosis was discovered during the operation. The urine passed by the urethra remained normal, but on and after the fourth day an abundance of turbid urine drained from the opening made in the kidney, and an examination led to the conclusion that parenchymatous nephritis and purulent pyelitis were present. On May 12th nephrectomy was attempted. After an abdominal incision and successful ligature of the structures in the hilum, it appeared that nothing was left to do besides setting free the lower part of the diseased kidney. On careful manipulation this extremity was found to be continuous with a bridge of renal tissue, which passed over the aorta and vena cava and joined the lower part of the left kidney. This bridge or isthmus was found to be but loosely connected with the great vessels. Dr. Socin divided it by means of the thermo-cautery, so that the right side of the horseshoe kidney came away. Five ligatures were applied to bleeding points on the raw surface left behind, which was then covered over by the capsule, the edges of the latter being united by sutures. An abdomino-lumbar drain was applied. The patient was in excellent health four months after the operation. In Braun's (Heidelberg) similar case a horseshoe kidney was discovered at operation for the removal of a pyonephrosis. The isthmus adhered strongly to the vena cava; on attempting to separate them, profuse venous hemorrhage occurred, which was controlled with difficulty. The patient sank from exhaustion at the end of the operation.—*British Med. Journal*, July 13, 1889.

Treatment of Spasmodic Croup.—The treatment indicated in spasmodic croup is, first to overcome the suffocation, and later to abort the paroxysms. The *Revue général de Clinique et de Thérapeutique*, of June 13th, suggests the following treatment:

1. Before or during the paroxysm an emetic should be given; this will facilitate the removal of the mucus in the throat.

2. Mild cutaneous counter-irritants should be used; such as hot-water fomentations applied to the throat. Hot baths are frequently of considerable value.

3. After the paroxysm a dessertspoonful of the following prescription should be administered every half hour:

℞.—Oxysulphuret of antimony, grs. ¾ to 1½.
Spirits of aconite root } āā gtts. v. to x.
Tincture of belladonna }
Syrup of orange flowers . f℥j.
Distilled Linden flower water f℥jv.—M.

Disinfection of Springs, and Number of Germs in Groundwater.—Dr. Carl Fränkel, in the *Zeitschrift f. Hygiene*, reports a series of experiments made by him to determine some points of practical importance, namely, What are the relative values of tube wells and pot wells, and can they be disinfected by the measure usually recommended?

With regard to tube wells, from their mode of construction they are not liable to contamination from surface impurities, as the pot wells are, and it becomes of the greatest consequence to know whether they receive infective microörganisms from more distant sources. The result of these experiments is that, as a rule, the water entering tube wells is absolutely free from microorganisms. But it still appears that a growth of microörganisms takes place in the tube wells, and a consideration of all the circumstances points to the growth of a pellicle of microörganisms clinging to the sides of the tube. Hence, one way of disinfecting the tube wells is to brush them clear, and then completely pump off the turbid liquid. In cases where this proceeding proves inadequate, a concentrated solution of carbolic acid and sulphuric acid dropped into the tube, and left for a day or two, will complete the disinfection. Disinfection of these wells by lime is quite unsuitable, as it forms a mortar, and seriously interferes with the entrance of water.

The ordinary pot well, on the other hand, is incapable of disinfection, and Dr. Fränkel agrees with Plagge that it is a hygienic monstrosity. Considering how common pot wells are in our country districts, these are results which require careful attention.

The tube wells, which Dr. Fränkel found to furnish water freer from germs, were sunk in a part of Berlin which, at first sight, would seem to expose them to great risk of infection. In reality, however, after a time, a thick pellicle forms in old soils, which effectually precludes the passage of germs beyond a certain depth. Two sources of error have here to be guarded against. In the first place, the pellicle or its equivalent, which prevents the passage of germs downward, may be broken through at some point, or the corresponding ground may be constituted in parts of pebbles or gravel, which allows of the transmission of microörganisms; and, in the second place, the chemical constitution of the water passing away from these old soils will very likely be such as to lead to a free growth of microörganisms, as was the case in these experiments. It is practically impossible to exclude all access of microörganisms to the well.

The chief conclusions to be drawn from Dr. Fränkel's experiments are, that Abyssinian or tube wells are infinitely preferable to the ordinary pot well, and that a disinfection of the tube in the manner indicated above is, as a rule, all that is necessary to make the water quite free from microörganisms.—*The Medical Chronicle*, July, 1889.

Creolin-eczema.—Encouraged by the universal praise and reported innocuousness of creolin, Dr. J. Wackez, of Munich, used the drug as a dressing for wounds in children. In seventeen cases of minor wounds in which he used creolin gauze as a dressing, ten healed by first intention; the remaining seven, however, developed an eczematous rash in the neighborhood of the wound, which closely resembled the rash of scarlet fever, and which occasioned severe itching. On the third day the skin became raised by numerous blisters, some of which were as large as a dollar. These blisters were filled with a clear liquid. The temperature of the skin was high, the neighboring lymphatics enlarged; the general condition of the patient was also considerably affected, there being loss of appetite, headache, and in some cases even vomiting. After the blisters had dried up, large

lamellæ of the epidermis were shed; in one case the entire surface of the palm of the hand and the volar surface of the fourth finger, which gave the hand the appearance of a burn. In all the cases creolin (Pearson's) had been used in solution 1 to 1000, the application being made with gauze soaked in the solution.

Dr. Wackez made further experiments with the drug on a boy, both hands of whom had been injured, and found that the hand dressed with creolin gauze developed similar eczema as observed in the other cases, whilst the opposite hand, which had been dressed with carbolized gauze, healed rapidly, without any unpleasant symptoms.—*Therap. Monatsh.*, June, 1889.

Lotion for Pityriasis.—DR. HILLAIRET and ZAUCHER, in *L'Union Médical*, of June 18th, give the following potion, claiming it to be of special value in cases of pityriasis alba:

℞.—Hydrate of chloral . . 3 parts.
Glycerine } . . āā 25 "
Alcohol }
Water . . . . . 100 " —M.

Sig.—Apply as a lotion to the affected parts, at first daily, later every two days, and then once a week. Its use should be decreased according to the improvement. When the disease is of an eczematous type, vapor baths or local hot-water sprays will be found useful.

Laminaria in Stricture of the Œsophagus.—We read in the *British Medical Journal*, of June 22d, that PROFESSOR SENATOR has recently stated that for about a year past he has used laminaria in stricture of the gullet with comparatively good results. A piece of laminaria is attached to the end of an ordinary œsophageal bougie, and for greater safety this is further connected with a string running through the whole length of the bougie. Different sizes are used according to circumstances. The instrument is passed into the stricture and left in position from half an hour to an hour, during which time the laminaria swells to a considerable extent. In one case it expanded from one to one and a half millimetres in the course of half an hour. The surface of the laminaria remains smooth, and does not injure the mucous membrane. In most of the cases in which Dr. Senator has tried this plan the stricture has been cancerous, and, as he says, although "by gradual and frequently repeated pressure a carcinoma may cicatrize and become atrophied, this very seldom happens." In a large proportion of his cases, however, the treatment produced very marked dilatation of the stricture, so that the patients after a certain time could swallow much better than before. In some instances there was no improvement, and Professor Senator confesses that at first his anxiety to dilate the stricture as quickly as possible made him apply the treatment without sufficient regard for the tolerance of the diseased parts. If due care is not exercised, the laminaria may swell so much as to cause great pain, and even difficulty in removal. The most favorable cases for the treatment are, of course, those of cicatricial stricture. Dr. Senator points out that laminaria may also be used with good effect in narrowing of other canals, and he relates one case of stricture of the rectum in which he tried it, but apparently with indifferent success.

Stomachic Mixture.—The *Revue de Thér. Méd.-Chir.*, June 1, 1889, gives the following stomachic mixture:

℞.—Compound tincture of cardamom . . . .
Tincture of vanilla . .
Tincture of absinthe . .
Tincture of canella . .
Tincture of ginger . .
Tincture of quassia . .
Tincture of calumbo . } āā ℥ijss.—M.

Sig.—Twenty-five drops before meals.

Hydracetin and Psoriasis.—Pure hydracetin, or, more correctly, acetyl-phenyl-hydracetin, is a white, crystalline powder, both tasteless and odorless. It dissolves but slightly in water, but is easily soluble in alcohol in proportions of 1 to 50. DR. GUTTMAN has noted its active therapeutic properties in psoriasis. In one case seven applications of a 10 per cent. ointment of hydracetin cured a case of severe psoriasis of the back; and in another case complete recovery resulted within a week. In neither case was any recurrence of the disease noted. —*Monatsheft f. Prak. Dermat.*, July, 1889.

The Vitality of the Cholera Bacteria in Milk.—Some time ago, the crew of a ship, at Calcutta, became infected with cholera. The infection was traced to the fact that the milk, which had been taken on board at Calcutta had been adulterated with water drawn from a tank which was proved to be infected with cholera excrements. In order to ascertain definitely the vitality of the cholera bacillus in milk, DR. S. KITASATO, of Japan, who is now working in Dr. Koch's laboratory, undertook a series of experiments, the results of which are reported in the *Centralb. für Bakter. und Parasit.*, June 14, 1889.

Unsterilized milk was, soon after being milked, placed in test-tubes and infected from cultures of cholera bacilli. The different tests were kept at various temperatures and subjected to hourly examinations. In all cases the bacilli died as soon as the milk became sour. In the tests which had been kept at a temperature of 97° F., the bacilli died inside of 14 hours, whilst in those kept at a temperature of 46° or 54° F. lived, at the longest, only for three and one-half days. In milk sterilized by boiling in a steam bath for four or five hours, the bacilli lived longer, as the milk kept fresh much longer. At a temperature of 97° F., the milk soured very gradually and the bacilli died in two weeks, the milk at the expiration of that time being found germless. When kept at a temperature not over 71° or 77° F., living cholera bacteria were found in the tests for three weeks.

Kitasato says that he found that if milk be boiled for five minutes in a water bath, its sterilization will be complete.

The Administration of Cod-liver Oil.—For the purpose of agreeably modifying both the odor as well as the taste of cod-liver oil, DR. SEIG, in the *Revue de Thér. Méd.-Chir.*, June 1, 1889, recommends that it be given in the following formula:

℞.—Cod-liver oil . . . . . f ℥lxx.
Creasote . . . . . ♏xl.
Saccharin . . . . . grs. ijss.—M.

The odor of this preparation will resemble that of roast meat.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, AUGUST 10, 1889.

THE FUNCTION OF DIGESTION IN PULMONARY PHTHISIS.

SYMPTOMS of digestive disturbance are prominent in every stage of phthisis, and sometimes occupy the foreground of the clinical picture. This is so well known that certain writers recommend a careful examination of the lungs in all cases of dyspepsia, especially in young people, and the term "latent dyspeptic phthisis" has been applied by Sée to cases of which the first symptoms are all referred to the digestive organs. In some cases, however, notwithstanding the presence of marked loss of appetite, and other symptoms of digestive disturbance, the functional capacity of the stomach is good, as is proved by the success attendant upon the treatment of this disease by forced alimentation.

Until quite recently there have been no criteria by which to discriminate the cases in which benefit may be expected from this treatment from those in which failure is sure to attend it. In two successive numbers of the *Deutsche medicinische Wochenschrift* (Nos. 14 and 15, 1889) DRS. O. BRIEGER and C. H. HILDEBRAND have published the results of their examinations of the gastric secretions in a number of cases of phthisis, and arrive, in the main, at similar conclusions. They differ somewhat, however, with reference to the causes of the digestive disturbances, Hildebrand referring them almost exclusively to fever, while Brieger simply mentions that, in two cases, hydrochloric acid, which had previously been present in the gastric secretions, disappeared with the onset of fever.

Of the 64 cases examined by Brieger, 31 were severe, with continuous fever; 27 moderate, with more or less fever; and 6 in an early stage without fever. In 16 per cent. of the first group the chemistry of digestion was normal, while in the remainder there was more or less gastric insufficiency; and in 9.6 per cent. there was a complete absence of the normal products of gastric secretion. Of the second group, the secretions were normal in 33 per cent.; in the remainder were more or less abnormal, while in 6.6 per cent. the normal secretions were absent. In the third group, the cases in which the gastric secretions were normal equalled in number those in which they were impaired.

Brieger attributes the digestive disorders of phthisis to chronic glandular gastritis, but brings no decisive anatomical proof to the support of this opinion. In the fatal cases necropsies were performed so long after death that it was impossible to distinguish ante- from post-mortem changes. His opinion that anæmia is the cause of digestive disorders in the earliest stage of phthisis we believe to be destitute of proof. It is only in the high grades of anæmia that digestive disorders can be said to depend directly on the impoverished state of the blood; and in phthisis, even in late stages, the anæmia is surprisingly slight—not to be compared with that of cancer of the stomach or intestine, or with that of pernicious anæmia. In the early stages of phthisis the anæmia is generally trivial.

Hildebrand's opinion, that the indigestion of phthisis is caused by fever, is less open to criticism. In one group of cases—the whole number was forty—hydrochloric acid was always present in the gastric secretions; in a second, it was never present; and in a third it was sometimes present, sometimes absent. These differences were all dependent on the presence or absence of fever. In the first group there was no fever; in the second it was continuous; and in the third it was intermittent. Hildebrand concludes from his experiments, that 100.2° F. is the temperature line at and above which free hydrochloric acid is absent from the gastric secretions.

These observations are, it is reasonable to hope, merely the beginning of more extended researches, not only in phthisis, but also in other chronic diseases. From the facts thereby obtained, the physician may be enabled to substitute for vague suggestions, precise directions with reference to diet, and to

arrange its details, not only with general reference to the disease, but with particular adaptation to the needs of the patient.

SUMMER RECREATION.

A COMPARISON of the present with the comparatively recent past shows a marked change in the habits of the people, particularly of our cities, with respect to summer recreations. The fashion of leaving home for a greater or less period during the summer season has become of very general observance, and is not confined to populated centres, or to the well-to-do or wealthy classes. Those in every avocation in life, from the humblest to the most responsible, expect and take a summer vacation. As a consequence of this popular demand, certain practices have sprung up, such as the early closing of places of business, the Saturday half-holiday, which is legalized in some States, the regular summer vacation to employees, and the increasing number of legal holidays.

The immense facilities for the accommodation of pleasure-seekers scattered all over the country, in the mountains, in the country, and by the seaside, which are being constantly extended, are being taken advantage of by an enormous number of people, coming and going throughout the season. They exist because of the great and ever-increasing popular demand for such accommodations. There are also the excursions by rail, by steamboat, and by steamship across the ocean for travel in foreign countries, which have increased so greatly as to make the summer season the harvest time for railroad and steamship companies. Those too poor to enjoy an outing are provided for liberally by such institutions as the Children's Country Week, fresh air societies, sanitarium associations, and the like.

The rapid increase of population partly explains the great multiplication of places of summer resort. But there is beyond this the fact, patent to every close observer, that a change is taking place in the views and practices of the people. The American people are fast becoming a pleasure-seeking people. The enormous increase and the great distribution of wealth provide for the gratification of this inclination, if they do not create it.

The necessity of relaxation from the intense business activity which characterizes American life arises from the demands of natural laws. Diversion of mind and rest of body recreate and restore exhausted functions, and prevent more permanent disability. The more active, taxing, and prolonged the mental and physical strain, especially if immoderate, the greater the necessity for rest and diversion, if the mental and physical health are to be maintained. The yearning for rest is based upon physiological laws. It is a fundamental feature of the Sabbath, divinely ordained for rest and worship.

The increasing tendency among an active, industrious, and energetic race to relax occasionally their labors, must be looked upon, from a hygienic and social standpoint, as of much advantage to the health and prosperity of the people. It is necessary, however, that the true object of the vacation is not perverted by immoderate indulgences and excesses of whatsoever kind, and that care and good judgment be exercised in selecting a suitable and healthy environment. There is need of caution to the seekers after health and recreation. Quietude and absolute rest of body and mind are the best restoratives to many who are jaded by incessant cares and worry. Others require the stimulus of out-door physical exercise, but it should be judiciously employed. It is a mistake to enter too actively upon a course of unaccustomed exercise. The system when enervated cannot respond to excessive demands, and the overstrain tends to weaken rather than strengthen enfeebled functions.

Excesses committed under the exhilaration of pleasure are to be guarded against as defeating the aim of healthful recreation. The exactions of society, if permitted to sway the coveted vacation, simply transfer the scene without altering the conditions, and depress and exhaust vitality, and render bad worse. The sources of disease often lurk in the shadow of the summer resort. It is therefore very necessary to look critically to the sanitary advantages of the place of sojourn. A healthful environment and a house with correct sanitary appointments are among the most important objects of selection. Wholesome water and safe drainage cannot be dispensed with. The absence of these essentials too often makes the summer experience a most disastrous one.

Immoderate surf-bathing, excessive indulgence at table, and constant encroachment upon the hours allotted to sleep, are violations of hygienic laws which are sure to demand a penalty. The *Lancet's* advice to the professional man, to turn his back upon the throngs of the summer resort and escape its wearying demands, and with few or no companions, except perhaps a faithful dog, seek an un-

frequented path, where diversion is pronounced and satisfying, is sage advice which the experience of many will endorse.

THE PREVENTION OF HOG CHOLERA.

In another column we present the conclusions reached by the Board of Inquiry, consisting of Drs. E. O. Shakespeare, R. Meade Bolton, and T. J. Burrill, appointed by the U. S. Commissioner of Agriculture to study the causes and prevention of hog cholera and swine plague. This inquiry was wisely instituted by the Department of Agriculture, with the view of obtaining such information as would enable it to restrict the spread of diseases which, according to accurate information, already cause a loss in this country of upward of twenty-millions of dollars every year.

It is a subject for congratulation that such competent men were secured for this difficult investigation, but it is a matter for deep regret that the money at the disposal of the Department was not sufficient to enable the Commission to complete its work. The results already obtained give reason to hope that the threshold of a discovery leading to important practical and economic results has already been crossed.

The Commission finds that the germs of hog cholera and of swine plague have been now clearly described and identified; that disinfection as a means of prevention cannot be made effective under the existing conditions; and that, with our present knowledge, treatment is futile. The real hope for the restriction of the disease probably lies in some form of preventive inoculation, but further investigation is necessary before this can be recommended, since every hog thus treated becomes, for the time being, a new centre of possible infection and, furthermore, inoculation of the living germ seems permanently to stunt the growth of the animal.

The Commission points out the important fact that the chemical products of certain pathogenic germs in artificial cultures possess the same protective power as do the living germs themselves, and their own uncompleted investigations seem to indicate strongly that this is true in reference to the germ of hog cholera. If further investigations confirm this, a safe, harmless, efficient and practical means of preventing hog cholera will have been found.

The objects sought for by this investigation are so important to the agricultural and economic interests of the country and the outlook for the early attainment of valuable results is so encouraging that the work of the Commission should be at once continued and vigorously prosecuted, and we trust that the Department of Agriculture will find ample means for this research at its disposal out of the funds now available from the appropriations for the new fiscal year.

Under the will of the late Dr. Alonzo Clark, a scholarship was endowed at the College of Physicians and Surgeons, New York, for the promotion of the discovery of new facts in medical science. This scholarship has an annual income of about nine hundred dollars, and the Faculty of the College have worthily bestowed it for a term of three years upon Dr. T. Mitchell Prudden.

Dr. Lewis A. Sayre has recently been elected an honorary member of the St. Petersburg Medical Society. Dr. Sayre's many friends will be gratified to learn that he has returned from a trip to the Hot Springs of North Carolina much improved in health.

Dr. J. F. Hartigan, of Washington, D. C., sailed on the "Belgenland," on July 17th. He is the newly appointed Consul to Trieste, a position which has been described as one of the best of the "travelling scholarships" in the gift of the Government. In some sense this appointment has been regarded as a reward of merit to Dr. Hartigan, his health having been imperiled and impaired during a service done for the Government at Enterprise, Florida, during the epidemic of yellow fever.

Dr. Oscar C. de Wolf has resigned his position as Commissioner of Health of Chicago after thirteen years of intelligent and faithful service. Dr. Wickersham has been appointed his successor.

The Ninth Annual Meeting of the Lehigh Valley Medical Association will be held at Glen Summit, Pa., on Friday, August 16, 1889. The President, Dr. G. N. Best, of Rosemont, N. J., will read a paper on "Evolution in the Causation of Disease," and Dr. Francis X. Dercum, of Philadelphia, will give the Annual Address, and he has chosen for his subject, "Railroad Shock and Its Treatment."

Mr. Jonathan Hutchinson has just been elected President for the ensuing year of the Royal College of Surgeons of England.

AN alleged physician, calling himself "Dr. F. A. Davis, of Johnstown," having sought to work upon the sympathies of the medical profession of New York City, a notice has been issued by Dr. Bryant, of the Department of Health, that no physician of that name has lived at Johnstown, Pa. The impostor may seek to ply his mean fraud elsewhere and we hope he may be caught and punished to the full extent of the law.

SOCIETY PROCEEDINGS.

THIRD CONGRESS OF THE GERMAN SOCIETY OF GYNECOLOGY.

Held at Freiburg, June 12, 13, and 14, 1889.

(Specially reported for THE MEDICAL NEWS.)

DR. KALTENBACH, of Halle, read a paper on

AUTO-INFECTION.

Two causes, he said, produce puerperal infections having as point of departure the genital apparatus. They are produced directly by microörganisms or by intoxication due to toxic matters produced by these same organisms; the microbes penetrate into the tissues, where they reproduce themselves or produce chemical poisons, which pass into the blood. These two powers, infection and intoxication, rarely present themselves in a pure or characteristic form, for more often the pathogenic germs are multiple and mixed with saprophytes or non-pathogenous microbes. Most puerperal diseases are produced by an infection from without, imported by a person, an instrument, or an apparatus. As sources of infection he mentioned especially the cadaver, septic wounds, the lochiæ of diseased women.

The most frequent forms of puerperal fever were formerly divided into septic peritonitis, diphtheria, diffuse phlegmonous inflammation, phlebitis, pyemia, etc. All these numerous forms are considered to-day as having their origin outside of the organism.

By auto-infection is specially meant the infection which arises from the remains of the fœtal membranes, from the necrosis and mortification of tissue which result from the too long compression of the soft parts by the fœtal head, from the putrefaction of the placenta, etc. The streptococcus is more often found as a promotor of puerperal infection and septic peritonitis. The gonococcus is a well-known infectious agent; but besides these, there exist a number of others which it is difficult for us to differentiate, and we have frequent transition between the saprophytes and pathogenic microbes. On the other hand, according to the experiments of Sheffeck and Döderlein, it is difficult to render the vagina aseptic in normal labor; the best prophylaxis consists in making successive disinfections with solutions of corrosive sublimate 1 : 2000 or 1 : 3000.

Out of 1500 labors observed in his clinic, there were but 2 deaths by contamination and 1 by septicæmia; one of these cases was due to a student who had been in a surgical ward where there existed cases of septic disease. 13 per cent. of his delivered patients have presented an elevation of temperature, which would have passed unperceived had the thermometer not been used. These women all were discharged from the clinic on the eleventh day following the labor.

DR. FEHLING, of Basle, considered the expression auto-infection objectionable. For a long time past Pasteur's experiments have demonstrated the important part played by the microörganisms of the air in the fermentation of the urine and milk. How does infection occur? Is it the result of contact; when and under what circumstances does it take place? As causes of these infections, microörganisms have been isolated by Koch, and their special characters studied. Gönner has made, under the direction of Garré, researches on the vaginal secretion of healthy women. He has met with staphylococci and streptococci, but he has been unable to bring about mortal infections in those animals with such germs. Winter has made at Schröder's clinic researches partly on pregnant women, partly on parts obtained from operation, and he has found that in a great many cases the uterus and its neck have no germs on their surface. No microörganism he has found has been able to give a positive result when inoculated in animals.

Döderlein, in his researches on the normal lochiæ, has found that 10 per cent. of women without fever would present microörganisms in their secretions; in one case he found streptococci; the inoculation of pure cultures in animals gave negative results. Tcherniewski, out of eighty-one cases in which he has examined the secretion of delivered women, has met with microbes in one-third of the cases. According to Bumm, no germs can be found in the lochiæ of healthy women.

He had always, in his researches, studied cases in which fever existed. He had found staphylococci and streptococci; in a case of pemphigus in a delivered woman he had found in pemphigoid bullæ a pure culture of streptococci. Grawitz's experiments have demonstrated the possibility of producing pus without staphylococci, simply by chemical irritants; he has even brought on peritonitis in such a way. He had himself observed a case of auto-infection in a delivered woman; when this woman came into his clinic she had a rapid pulse, high temperature, chills, abundant hemorrhage. She died six days after her delivery. At the autopsy he found an abscess of the kidney, with the presence of streptococci in the pus.

DR. BUMM, of Wurzburg, having examined bacteriologically several cases of parametritis, had come to the same conclusion as Fritsch; only one species of parametritis is to be recognized, and that is infectious parametritis. Traumatic parametritis, as usually described, does not exist. The name of traumatic is more often given to exudative parametritis, which, without running into an abscess, finishes by being absorbed, and so escapes histological examination. He had made researches in five cases of exudative parametritis, and had penetrated into the exudate by means of a very fine sterilized canula. In two cases of gonorrhœal parametritis he had found no microörganism, either by microscopical examination, by culture on human serum, or in other nutritive mediums.

He probably had to deal with cases which had existed for a long time; in the three other cases he found streptococci. He had made experimental researches on rabbits, and had succeeded quite easily in producing parametritis by trituration. He had also produced para-

metritis by the direct inoculation of the tissue with streptococci or staphylococci. He did not think that in the normal state one can find pathogenic microbes either in the neck of the uterus or in the vagina; the streptococci found there come from the outside. The staphylococcus aureus, which is a well-marked pathogenic microbe, is easily recognizable, and it is very doubtful whether it has ever been found in the vagina of a healthy woman.

Dr. Leopold, of Dresden, had reduced in his clinic the percentage of delivered patients with fever to three and two per cent., which result is due entirely to antiseptic precautions, and to thorough cleansing of the vagina. Out of five hundred and ten labors, he had had nine cases of fevers oscillating between 101.3° and 102.2°. Of these nine women, more than one was syphilitic, one presented an hæmatoma, another an old exudate, while others had a fœtus in a putrefied state. He had had two cases of death; one he attributed to auto-infection, but on careful inquiry he found that the woman had been infected per vaginam.

Dr. Mermann, of Mannheim, said that out of two hundred and seventy-five labors, which occurred in his clinic, he had observed only five and six per cent. of febrile cases. In all cases he had a temperature below 102°, and the patients left the hospital on the eleventh day. He thought that to restrict the mortality of women in labor, we ought to forbid midwifes to make any irrigations. In Saxony and Hesse there is a regulation forbiding midwifes to make any internal irrigations; they must confine their intervention to the washing of the external parts.

Dr. Kehrer, of Heidelberg, said that we often find microbes in pregnant women. He had himself collected in sterilized tubes secretions from pregnant women, and inoculated these secretions in rabbits, and he obtained in all cases one or more extensive abscesses. He thought that we must employ all possible means of disinfection to attenuate or neutralize the virulence of the germs which could exist in those organs.

Dr. Ziegenspeck, of Munich, said that we sometimes find germs in the vagina, and it is easily conceivable that an auto-infection can produce itself; it would be well to study the path followed by these microörganisms. Dr. Thonen has made researches on seven women who had normal labors; in the lochiæ of these women he had found three times a streptococcus in the vagina, and twice a streptococcus in the lochiæ obtained from the uterus.

Dr. Benckiser, of Karlsruhe, treated a woman who was taken with fever in the fifth month of her pregnancy; this woman had never been examined. As there existed a fetid secretion and, moreover, an elevated temperature, he induced premature labor. The uterine neck was closed. He made irrigations of warm water, and obtained a living fœtus of five months. The placenta was situated in the posterior region, and presented in its lower segment an hemorrhagic portion which had partially undergone decomposition. We had here a true case of auto-infection.

GONORRHŒAL PYOSALPINGITIS.

Dr. Werth, of Kiel, reported a very interesting case of a pyosalpingitis where gonococci were found not only in the pus, but also in the tissue itself of the Fallopian tube. His case was aged thirty-two, a servant, who for five weeks had been complaining of pain in the lower part of the abdomen and renal region. During the last eight days, the pains had become so severe that she was obliged to remain in bed, and had a very high fever. He removed the two tubes without any pus escaping into the abdomen; moreover, he cauterized the pedicle on each side with the thermo-cautery. The patient died four days after the operation, of septic peritonitis. At the post-mortem he found traces of a former peritonitis. The abdominal wound was well closed; no pus was found in the abdomen, the mesenteric glands were hypertrophied, the other organs in an hyperæmic condition. As to the histological examination, he said that before the operation he found no gonococci, either in the uterine neck or in the canal of the urethra. The left tube only contained a single diplococcus, not retained in its cell. Prof. Heller succeeded, however, in staining in the pus from the right tube a number of diplococci contained in the cells of the pus, and also in the tissue of the Fallopian tube. The gonococci were situated in a mass in the epithelial layer of the tube, on a level with the uterine portion, and also in the middle of the organ.

DISINFECTED SPONGES AND CATGUT.

Dr. Benckiser, of Karlsruhe, presented catgut and sponges sterilized at a temperature of 284°. When subjected for twenty minutes to such a temperature they are absolutely sterile. To know whether catgut treated in this manner was sterile, he tried a culture in fifty tubes of agar-agar, maintained at a temperature of 98.3°, and all the tubes remained sterile.

A CASE OF EXTRA-UTERINE PREGNANCY TREATED BY INJECTIONS OF MORPHINE.

Dr. Winckel, of Munich, reported a case of pregnancy of the left tube; the diagnosis had been confirmed by an examination of the uterine mucous membrane, which presented very clearly all the characters of the decidua. At the beginning the sac was the size of a hen's egg. He made an injection of half a grain of morphine into the fœtal sac; the patient remained in bed and had ice placed on her abdomen. At first she felt some pains; at the end of eight days he examined her again and found that the tumor had not diminished in volume. The patient feeling better, wanted to go out; he made a new injection of a quarter of a grain into the fœtal sac, and to-day he finds that the tumor has been largely reduced, although only under treatment for the past four weeks. He had treated nine cases of extra-uterine pregnancy by this method.

(*To be continued.*)

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, June 17, 1889.

The President, Charles S. Wood, M.D., in the Chair.

Dr. Edward G. Janeway read a paper on

THE DIAGNOSIS AND TREATMENT OF BASEDOW'S DISEASE.

His remarks, he said, were not intended to include the whole range of the disease, upon the main features of which he presumed that all present were sufficiently in-

formed; but from his personal observations in a considerable number of cases he trusted that he might, perhaps, be able to add something of practical interest in the directions indicated in the title announced. When well developed, and presenting all the marked features characteristic of it, Basedow's disease could be at once recognized by any one; but the case was very different in the incipiency of the affection, or when some of the characteristics were rather obscure.

At the beginning the general state of the patient's health was sometimes more apt to strike the physician, and, perhaps, led him to give a wrong name to the malady. Of the three terms most commonly used to conceal the absence of definite knowledge regarding the disease present in more or less obscure cases, neurasthenia, malaria, and lithæmia, the two former were occasionally applied to this disease. As regards neurasthenia, the presence of nervous debility gave some ground for its use, while in other cases the patient not only grew weaker, but had a sense of heat, or even elevation of temperature; thus making the diagnosis of malaria plausible. The adoption of either of these terms, however, was of bad import for the patient, for the reason that the treatment appropriate to these conditions would not subdue Basedow's disease.

Dr. Janeway said he had known even a supposition of phthisis to exist on account of the emaciation, loss of strength, and sense of warmth present, sometimes in connection with a cough due either to an intercurrent cold or to congestion dependent upon enfeeblement of the heart. In such cases the goitre pressed on the larynx and trachea, causing congestion of these parts; while the enlarged heart caused congestion of the lungs, and of itself produced some dulness. Moreover, from these causes, a modification of the respiration occurred, and patients with advanced Basedow's disease had been thought to die of phthisis when none was found at the post-mortem examination.

Each of the three factors of the disease, exophthalmos, goitre, and palpitation, might be used as a designation of disease without having regard to the nature of the process. It was not uncommon for the exophthalmos to be overlooked by the patient and his friends, owing to its gradual supervention. Graefe's diagnostic rule, that the upper lid does not follow the eyeball, as in the normal state, on looking downward, was not a certain criterion, for we might not find it in all cases where slight exophthalmos existed. Moreover, Dr. Janeway had seen it present in one eye and absent in the other. An experienced physician could often detect the exophthalmos when its presence is unexpected; and an excellent test was to ask of old acquaintances who have not seen the patient for some time their conclusion in the case. It was to be remembered, of course, however, that every case of exophthalmos was not dependent upon Basedow's disease.

The enlargement of the thyroid gland might deceive by its presence or mislead by its apparent absence. In the milder cases the slight growth or vascular engorgement of the thyroid (the patient having in the meanwhile grown thinner) might keep the neck of only normal fulness. Attention, however, to the condition of the circulation in the neck would seem to prevent misconception. Even when the thyroid was but little enlarged, the peculiar vascular turgescence, arterial thrill, and arterial and venous murmurs could be made out. Where the thyroid was enlarged, the thrill was particularly noticeable in the inferior thyroid arteries; while when this was not the case, he had felt it rather in the carotids themselves. Basedow's disease had sometimes been mistaken for aneurism, on account of the enlargement, thrill, and accompanying murmurs; and this was particularly apt to be the case when the enlargement was predominantly on one side. An occasional case would present the difficulty of deciding whether the disease was an illustration of parenchymatous goitre accompanied by palpitation or belonged more to Basedow's disease.

The condition of the part might be misleading in several ways. (1) Basedow's disease may complicate organic heart disease of preëxistent date.

(2) At times it becomes difficult to determine whether a murmur of mitral insufficiency is due to an old lesion or is dependent upon muscular incompetence or relative insufficiency of the mitral valve. Dr. Janeway said he had known hearts considerably enlarged so far as the left ventricle was concerned, having well-marked systolic murmurs, audible posteriorly, yield under treatment to such a degree that the murmur disappeared and the heart returned to a nearly normal size. This constituted one of the greatest liabilities in the way of diagnostic error in cases possessed of moderate goitre and exophthalmos, as the tendency was to consider the case one of incurable cardiac disease.

In certain cases to which sufficient attention, he thought, had not been paid, the patient would suddenly fall or have his legs give way under him, but would almost immediately be able to resume the standing position or walk. The question of cerebral or spinal disease might be raised in connection with these; but the rapidity of the occurrence and of its disappearance disproved such a hypothesis. The cases in which he had met with it had been weakened by diarrhœa or vomiting, or as a result of the malnutrition accompanying the disease, and had, under excitement or physical exertion, extremely rapid heart action.

(3) As previously mentioned, the congestion of the lungs from the weakened heart may raise the suspicion of phthisis.

(4) Cases are met with of palpitation without exophthalmos or goitre, but having, as far as the heart and general condition are concerned, phenomena identical with those occurring in exophthalmic goitre. Dr. Janeway said he had been accustomed to consider such cases allied to the disease.

As to the condition of the heart in Basedow's disease, his experience was that cases occur without very marked enlargement. Others, however, were met with in which, with an antecedent history of freedom from cardiac disease, hypertrophy with dilatation is produced by the disease.

Irritable vomiting was at times a very distressing accompaniment of Basedow's disease, and might even be a cause of death.

The treatment, he said, must have relation to the condition of the circulation, to the accompanying anæmia, and to any coëxisting irregularity in the functions of the body, especially menstrual disorder. It was well to remember, however, that menstrual irregularity might be a result rather than a cause of the trouble. One of the most prominent factors in treatment consisted in finding

an agent which will quiet the rapidity of the heart's action. Dr. Janeway's experience has led him to discontinue digitalis in these cases. Formerly, he employed tincture of aconite to considerable extent, and he had seen good results from it in cases where but for the name of the disease he would not have ventured to use it. As a rule, he had the best results from the continued use of small doses.

Of late, however, he had employed the tincture of strophanthus in doses of five minims three times a day, gradually increased if necessary. Of eight cases in which he had used it, he had no information of the result in three; in two a cure had occurred; the only other remedy employed being iron. In one other, complicated with mitral insufficiency and considerable dilated hypertrophy of the left ventricle, there had been a cessation of the palpitation and a considerable improvement in the heart's condition. In the seventh case recovery had occurred, but galvanism was also used. The eighth patient had such irritable vomiting that it was impossible to give the remedy, or even to administer much food, by the mouth, and she succumbed to the exhaustion of the disease and vomiting in a neighboring city, after she had passed from his immediate observation. On the whole, the results from strophanthus had been such that he could add his endorsement to that of others of its utility in this disease. It had succeeded in cases where digitalis had failed, and he preferred it to aconite as less dangerous, particularly in cases where the heart was somewhat enfeebled. He had tried spartein in two cases, but in neither did it prove of much service. In one of these aconite, galvanism, and iron produced a marked improvement.

It was formerly his custom in all cases to advise galvanism, in conjunction with iron and some cardiac remedy, but he had had no case of cure where galvanism was used alone. More recent cases treated by strophanthus and iron had recovered, or improved as rapidly and as thoroughly as the cases in which galvanism was formerly employed, and such results naturally raised the question whether the good results obtained when galvanism was used were not in reality due to the cardiac remedy employed at the same time. Personally, he had not used atropia, though he had seen cases in which it had been used, but without favorable result. Rest, both physical and mental, was a necessary adjuvant in the treatment; as well as the avoidance of worry and of emotional excitement.

It was reasonable to suppose that the condition of the circulation in this disease tended to produce the restlessness, often associated with insomnia, met with in some cases, and in a certain proportion of these it would yield to the ordinary treatment mentioned. In one case he had used sulphonal with good results. Formerly, choice had to be made of the bromides, morphia, or, preferably, codeia, and chloral, or the use of the wet pack or bath. Iron was not invariably necessary, but was usually indicated by the coexisting anæmia. Attention should be paid to the condition of the nutrition, as evidenced by the appetite and general feeling, and by the weight of the body; and whenever this was at fault, appropriate measures should be employed to secure an improvement. In conclusion, he said that confidence on the part of the physician that he could produce an amelioration was of decided benefit. Moreover, it had seemed to him that hospital and dispensary patients were less amenable to treatment than those in the better walks of life. When fright or worry was a prominent factor in the production of the disease, it certainly did not add to the efficacy of the treatment to have a patient surrounded by the sick and dying.

Dr. N. J. Hepburn said that he felt greatly indebted to Dr. Janeway for the practical points which he had given from his rich personal experience. He thought that not infrequently cases are met with in which the ordinary symptoms were absent. Only that day he had seen a case in which the only sign of the disease was a slight enlargement of the thyroid. There was no organic heart disease, but a murmur could be distinguished which was probably anæmic in character. The trouble had lasted about ten months, and very little treatment had been resorted to. The patient's first question was: "Can I get well?" and he thought this was a difficult question to answer. In regard to the treatment, he said he was afraid that we should always be more or less in the dark until the true lesion of exophthalmic goitre was discovered. As to this lesion, it had been supposed that it belonged to the cervical sympathetic. A recent author, in one of the British journals, however, claimed that the trouble was located in the fourth ventricle, and that the cervical sympathetic was perfectly healthy. It seemed possible, however, that there might be some reflex irritation connecting the two lesions. The multiplicity of remedies which had been employed in Basedow's disease, he thought, was an indication of the obscurity of its pathology.

Dr. Alfred T. Carroll said that his experience with this affection had not been very large, but was large enough to teach him that we need not only a better treatment than we now have, but a better clinical history of the disease than any of the text-books give. He thought it probable that there were a certain number of cases which occurred and which were never recognized by the physician as cases of exophthalmic goitre. The circulatory troubles were usually the first to be noticed. In all the cases but one that he had seen, there had been as the starting-point a shock or fright; some sudden disturbance lighting up the train of symptoms which we recognized as constituting exophthalmic goitre. In one case, that of a lady, the trouble was caused by the news of the sudden death of a favorite brother.

Dr. Carroll presented sphygmographic tracings from three cases which recovered; the tracing in one instance being nearly normal, and in the other two showing marked disturbances of the circulation. In the treatment he had derived no benefit from galvanization of the cervical sympathetic formerly so much practised; but he had found veratrum viride of considerable service. He agreed with Dr. Janeway as to the inefficiency of digitalis in this disease.

Dr. J. P. Oberndorfer related a case which he had under observation for about two years. For the first two or three months he employed galvanism alone, but, finding no improvement result, he then abandoned it. Like Dr. Janeway, he saw no benefit derived from digitalis, and the only thing which seemed to do her any good was opium, or, rather, morphia. This retarded the rapidity of the pulse and strengthened its force; but the patient finally died from the exhaustion resulting from an uncontrollable diarrhœa.

THE PRESIDENT said that, as had been mentioned in the paper, in some of the cases the disease abated without any known cause. Some years ago he saw a case of Basedow's disease in which the patient was taken with pneumonia. He was treated with antimony in connection with Dover's powder, and after the pneumonia cleared up the exophthalmic goitre became markedly diminished, and did not increase in severity again.

DR. JANEWAY, in closing the discussion, said that certain points had been brought up by the speakers to which he did not allude in his paper. He said nothing about the pathology because this was so extremely obscure. In some of the cases in which autopsies were made the cervical sympathetic had been found entirely normal, and this would certainly disprove the hypothesis that the lesion of Basedow's disease was located in this portion of the nervous system. More recent investigations would seem to show that the trouble originated, either directly or indirectly, in the medulla oblongata. As to the starting-point of the disease, from a clinical point of view it would not do always to attribute this to such a cause as fright or emotional excitement. In one of the cases reported in the paper, where the patient was a lawyer of distinction, there was no fright, no special anxiety, and no mental strain from overwork. In this instance a complete recovery followed the use of strophanthus and iron. It was a well-demonstrated fact, however, that a great many of the cases do originate from fright, worry, or emotional excitement. Hence, the disease was more common in females than in males; though he had met with a considerable number of cases in men.

He thought it advisable to avoid, if possible, the use of such agents as opium, as sooner or later the nutrition would become affected by the drug, and it was of the highest importance that the nutrition should be maintained as perfect as possible. He had met with cases in which strophanthus and other appropriate remedies produced no benefit as long as the nutrition was interfered with, but when this had become improved the distinctive features of the disease rapidly improved under their use. In neuralgias, also, and all chronic nervous diseases he disliked to use opium for the same reason. There were, however, certain cases of Basedow's disease attended with rapidity of the heart's action in which nothing acted so efficiently in controlling this symptom as opium, and the same was true of some cases of aneurism in the region of the neck.

DR. J. LEWIS SMITH said that all the cases of Basedow's disease which he had met with were in women between the ages of twenty and thirty-five. In one case that he recalled, in which all the characteristic signs of the disease were present, and in so marked a form that the patient's appearance attracted attention on the street, a perfect recovery was secured, principally through the use of aconite.

(To be continued.)

CORRESPONDENCE.

A WINTER VACATION TO THE WINDWARD ISLANDS.

I.

LYING at our very threshold, as we moderns understand distance, there exists a region in which the past of a century seems incorporated into the present as vividly as we could project the picture of some old ruin upon a screen. Here were contributed the first chapters to the wonderful story of our Western World, the home of tradition and the most fascinating romance that so closely borders upon crime. Spaniard, Frenchman, and sturdy Saxon, if at peace elsewhere throughout the world, never met here except in warfare. Here was the school in which England learned to gain and keep the mastery of the sea; where Spanish power was first ground to dust, and French greed lost its grip upon the treasure house of the West. All this and more will be accepted as solemn truth by every boy who has absorbed the literature of the Spanish Main and Windward Islands.

It was not choice but stern necessity that compelled me to look in the direction of the Windward Islands as a health resort, and the fact that my selection proved a wise one, and that I had made the discovery of a new region for the climatic treatment of the chronic catarrhs of our northern winters has led me to offer to the readers of THE NEWS a few letters descriptive of my voyage. "Where are the Windward and Leeward Islands?" was a question that was put to me by nearly everybody who learned of my plans—a question that I answered in a variety of ways. In fact a geographical region that is defined on one side by the direction from which the wind comes, and on the other by whither it blows, has about it a delightful uncertainty that permits considerable latitude of description.

If you are living upon the bank of a river you speak of any place above you as up stream and any place below as down. It is so with the Creole of the Lesser Antilles: all the islands situated to the south of the one he inhabits are "Windward Islands" and those to the north are "Leeward." At the same time, when he travels he goes down the islands by going north from Trinidad, or south if he begins his journey from St. Croix. Let the reader take his map, and, drawing a line south of the islands of St. Croix and St. Bartholomew, he makes all those islands lying to the south the Windward Islands. In this way he groups them geologically; for all, with the exception of Antigua and Barbadoes, are volcanic in origin, while there is no evidence of recent igneous formation in those lying to the north and westward. According to the geographers, however, he must draw his line at Martinique, thence south to Trinidad, they are called the Windward Islands, while those to the eastward of Porto Rica are the Leeward Islands. The description of their place on earth is vague, but why should it not be so since they are as beautiful as some exquisite dream?

It is not in acccordance with good ethical rules to find fault with the ship that brought you safe over, but the truth in the matter may just as well be told once for all. The steamer "Barracouta" was a wet ship. She took water over her bow, and on the slightest chance it would come over her weather side, it percolated through the deck, and from mysterious regions known only to the ship's plumber. She was built, like all steamers that voyage to the Carribean Sea, flat-bottomed and without a keel. Of course she lacked stability, and had a capacity to roll that exceeded belief. Give her a beam sea and she would roll her decks under in good weather. We started out a crowd of sixty, at least ten more than the saloon capacity of the ship, mostly round-trip tourists like

myself. For the first few days we eyed one another coldly and with suspicion after the manner of strangers. But the water melted away our reserve and after we had been thrown into each other's laps sufficiently often we were macerated and shaken down into a very homogeneous and happy family.

After six days we found ourselves one Sunday morning at rest off the town of Frederickstedt, in the Island of St. Croix. A pretty village nestled in its grove of palms. A whitewashed fort, from which floated the Danish flag, frowned at us from the beach. Behind lay the island in a series of receding peaks, clothed in a profusion of tropic verdure. About the low-browed summits hung masses of cloud. From off the shore came a mysterious odor of the tropics, fresh and sweet, a sound of church bells, a restful murmur of surf. I was on shore as soon as I could get breakfast. The houses were low stone buildings, with gardens enclosed in plastered stone walls. Everything appeared very solid, old and well preserved. The interior met all our expectations, as viewed from the deck of the steamer. One beauty after another feasted our eyes in rapid succession. The island is mountainous, sharp cones, with interlying valleys. The rain in the morning left its effects in detached masses of heavy cloud that was hurried along before the stiff northeast trades and produced magical effects of shadows. One mountain apex would stand grand and obscure in its cap of cloud, while a near summit revealed sharply every detail of rock and foliage in the glare of the tropic sun. In the deep valleys the contrasts of light and shade gave immensity and to some winding vistas too profound a depth and gloom for the abode of man, while ever under your gaze in its widest features there would be a burst of sunlight revealing the exuberance of life and foliage. The variety of color that clothed the sides of the mountains and valleys was remarkable. The mango grew in groups with a green as dark as night, the light green of wide stretches of cane-field, and a shade just dark enough for contrast of the graceful palms; the rich red and brown of newly plowed land and the gray and purple of protruding masses of rock. As we gained the summit of a dividing ridge we had a view that equalled anything the earth can produce; not so grand as many, but full of the peace and gentleness that typify nature in her fulness of beauty. A winding valley threading its way amid a procession of mountains that, through their gateways of green, gave a receding vista of glens and valleys in brilliant light and patches of shadow with every color that can grace the earth, ending in a wide expanse of the Carribean Sea, and a sky line that melted into a greenish-purple haze.

It was painful to see amid all these beauties the traces of a Negro insurrection that held the island for three days and left ruined plantations on every side. Some old residents told me that forty or fifty years ago the island was a favorite winter resort of people from the States, bringing with them their horses and carriages. No more exquisite winter climate can be imagined. The temperature does not exceed 80°, always tempered by the northeast trades, and on some of the higher peaks a temperature of 65° or 70° can be found.

We were on board the steamer for six o'clock dinner, and at eight o'clock we weighed anchor and steamed away on our course down the islands.

Ely Van de Warker.

DEATH FROM SULPHONAL.

To the Editor of The Medical News,

Sir: I report the following case of death from sulphonal, which resembles, except in its issue, Case III. reported by Dr. Hay in the July number of the *American Journal of the Medical Sciences*, for in spite of the numerous examples of disagreeable after-effects, it is still constantly recommended as safe in doses exceeding that I gave with fatal result. Kast, in his original report, and other observers have warned against large doses to females on account of especial susceptibility, but I fear that the continual repetition of its safety and freedom from action on pulse, temperature, and respiration, will make others careless as it did myself.

Miss B., aged twenty-eight, American, dressmaker, was thrown from a carriage two years ago. Since then she suffered constantly from irritation of the spine and the symptoms of neurasthenia became marked, but she continued to use the sewing machine as much as her strength would permit. There was no evidence of organic lesion. Neither rest, tonics, nor any form of local treatment caused improvement. She was always very nervous and now had almost constant headache. The excitement of a slander suit decided against her friends caused her to become entirely insane. The type was melancholia, but for a few days hysterical symptoms predominated. The first night she obtained several hours sleep by means of chloral, but her condition was such the next day that I thought the chloral did more harm than the sleep did good, so for several days I simply gave her frequent small doses of cannabis Indica and potassium bromide, pushing her food as much as possible. Some nights she obtained no sleep and sometimes considerable. I then gave her xl ♏ of paraldehyde with no effect at all. Next day she received no medicine and at night I gave her fifteen grains of sulphonal and in one and a quarter hours, patient being still wild and wakeful,she was given fifteen grains more. She soon went to sleep and slept quietly till I saw her twelve hours later. She was then sleeping naturally, and for the next twelve hours she could be easily roused enough to swallow and by energetic stimulation enough to talk rationally, but when let alone would at once be asleep. Pulse 95, respiration but slightly accelerated, pupils normal.

About eighteen hours after taking the sulphonal, the pupils being contracted, $\frac{1}{100}$ grain of atropine was injected hypodermatically and from this on till near her death the pupils were neither unduly contracted nor dilated and responded to light. Aside from the atropine no remedy seemed to have any effect, though in all about $\frac{1}{12}$ of a grain of strychnine was injected, the faradic current, aromatic spirits of ammonia, and later whiskey were freely used.

Her temperature taken about the eighteenth hour was 102°. Leaving her about the twenty-second hour able to answer and strike those who were keeping her awake, I found her on my return an hour afterward apparently dying, greatly cyanosed and scarcely breathing. In trying to keep her up, her head had been allowed to fall forward; I made a complete extension of the head and she began at once to breathe freely. After failure of respiration began, her pulse being good, artificial respiration was kept up for several hours, but finally the

cyanosis began to increase and she died of failure of respiration forty hours after taking the sulphonal.

R. R. Petitt, M.D.

Dayton, Ohio.

NEWS ITEMS.

Report of the United States Board of Inquiry Concerning Epidemic Diseases among Swine.—The Commission, consisting of Drs. E. O. Shakespeare, R. Meade Bolton, and T. J. Burrill, appointed last November by the Commissioner of Agriculture to examine and report upon the causes and means of prevention of hog cholera, have just forwarded the report of their inquiry, which was cut short by the exhaustion of the appropriation at the disposal of the Department for the investigation.

The conclusions of the Commission are as follows:

1. It is the opinion of the Commission, based upon their own individual observations and examinations of the subject, that there are at least two widespread epidemic diseases of hogs in this country which are caused by different microörganisms, but which have a clinical history and pathological lesions more or less similar and very difficult to distinguish without the aid of the microscope and resort to bacteriological methods; and that these two epidemic diseases have been fairly well described in the recent annual reports of the Bureau of Animal Industry, except it does not appear that "hog cholera" of these reports can be said to have its special or exclusive seat in the digestive tract of the animal as distinct from the lungs. So far as the knowledge and the observation of the Commission go, one of these epidemic diseases, viz., that called by the Bureau authorities "swine plague," appears to be far less prevalent than the other which has been named by them "hog cholera."

The Commission are further of the opinion that the disease called by the authorities at Washington "hog cholera" is caused by the specific action of a certain microbe named by them "the hog cholera germ," which has certain characteristics of form, size, movement, mode of growth in artificial cultures, and action upon certain lower animals, and taken together enable one to distinguish it from other microbes which have been described from time to time by various authors as present in swine disease, and that the descriptions of this microbe and its peculiarities, as set forth in recent annual reports of the Bureau of Animal Industry, are fairly accurate.

The Commission are also of the opinion, although to a less positive degree, that the epidemic disease called by the Bureau authorities "swine plague," has as its specific cause a certain microbe possessing characteristics which have been fairly well described in recent annual reports of the Bureau of Animal Industry, which distinguish it both biologically and pathologically from the first-mentioned "germ of hog cholera."

2. It is the opinion of the Commission that the actual and undeniable proof of the pathogenic relations between the so-called "hog cholera" germ, above mentioned, and the disease of hog cholera was first published in the annual report of the Department of Agriculture for 1885, and in the second annual report of the Bureau of Animal Industry of the same year, hence was not antedated with respect to epidemic diseases of swine existing in the United States. The discovery of the disease called "swine plague," and of the microbe to which it is due, must be considered original, on the part of the Bureau authorities, at least as far as work in the United States is concerned.

3. In the opinion of the Commission the epidemic disease of swine investigated by Drs. Billings and Roberts, in Nebraska, however seemingly different in the published descriptions, is identical in its clinical features, pathological lesions and specific cause, with the disease investigated by the Bureau of Animal Industry at Washington, and called by the latter "hog cholera;" and, furthermore, that the pathogenic microbe which is the specific cause of this disease is identical in both instances. It is also their opinion that the descriptions of this germ, published by each of these investigators, are in the main correct. The two chief points in these descriptions upon which the above-mentioned investigators have differed more or less widely, are as to some minor points of morphology and variation of the behavior of the microbe under various methods of staining.

4. It is the opinion of the Commission that the microbe which Dr. Detmers at present regards as the specific cause of "hog cholera" is probably the same microbe which is considered by the Bureau authorities as the specific cause of hog cholera; but, according to present requirements of bacterial research and interpretation, it is impossible to declare that the organism as described by him in his reports, published by the Department of Agriculture, was the same thing.

In their observation of the methods of bacteriological research pursued by the Bureau of Animal Industry at Washington, the Commission are of the opinion that as to carefulness and precision they are up to the standard of modern requirements concerning bacteriological investigations. They are essentially the same as those pursued at Berlin in the Pathological Laboratory of the Imperial Board of Health, and in the Hygenic Institute, of which Professor Koch is the head.

From their observation of the methods of bacteriological research pursued by Dr. Billings, in Nebraska, the Commission are of the opinion that it was difficult, if not inpossible, for that distinguished investigator, by his usual method, to discover and isolate a germ associated with "the hog cholera germ" in the tissues of the body of the pig, and this is particularly true of the so-called "swine plague" germ, claimed by the Bureau authorities to be the specific cause of the epidemic disease latterly named by them "swine plague." In the opinion of the Commission, therefore, the failure of Dr. Billings in his researches to find the so-called "swine plague" germ in the tissues of the spleen (the organ from which he almost invariably made his cultures) cannot be regarded as incontestable proof that the "swine plague" germ has had no existence in the afflicted hogs which have fallen under his observation, and affords no evidence that this last-named disease does not occur in Nebraska.

The Commission regard their experiments concerning immunity as inconclusive and more or less indefinite; yet it seems to be evident that there is a certain degree of protection against artificial acquisition of hog cholera possessed by the Nebraska pigs which had been inoculated and which had recovered from the natural disease, the latter appearing to be slightly less protected than the former. Furthermore, the feeding experiments above mentioned appear to indicate that the hog can be arti-

ficially protected against the action of the virulent living cultures even to a greater degree by introducing the germs into the stomach than by subcutaneous inoculation.

It is the opinion of the Commission that the only proper way to test practically the real value of artificial protection against "hog cholera" is to expose the supposed protected pig to the natural acquisition of the disease under ordinary conditions, such as exist among a herd of hogs suffering from the natural disease. It is a well-known fact brought to light by recent investigations concerning the nature of infectious diseases, that immunity or protection from a second attack, whether artificial or natural, is not absolute, but only relative in degree. There is no known infectious disease, either of man or beast, capable of producing by one attack a degree of protection which is surely and absolutely effective against a second attack.

Experience has abundantly shown that animals which are naturally or artificially protected can be practically overwhelmed by enormous doses of the germs of the disease, and thus be made to suffer a recurrent attack, which may even be fatal. Furthermore, the method of artificial inoculation, and the mode of natural acquisition of the disease, also seem to influence materially the degree of protection acquired. For example, it is well known that Pasteur has put into extensive practical application in France his method of producing artificial immunity against anthrax in sheep and cattle by subcutaneous inoculation, and it is also well known that the losses by this disease among herds where the inoculation has been thus performed has been reduced 90 per cent. as the result of inoculation; yet Koch, as an opponent of Pasteur concerning the practical value of protective inoculation, has demonstrated beyond cavil that cattle in which subcutaneous inoculation has been practised are but little protected against the acquisition of the disease experimentally by way of the digestive apparatus.

It is the opinion of the Commission that disinfection as a general practical means of preventing the enormous annual losses from diseases of swine in this country cannot be made effective under the conditions which exist in the West and other regions where hog raising is extensive.

As far as our present knowledge extends treatment of existing cases is utterly futile. There remain, therefore, to be considered but two alternative means of prevention—quarantine and extermination of infected hogs, with their surroundings, or on the other hand, some form of preventive inoculation.

The vast importance of the subject calls for an exhaustive investigation as early as possible of this latter means, for the former is very difficult of application.

Some of the tests made in Nebraska under the direction of Dr. Billings certainly give promise of great possibilities in this direction. It is the opinion of the Commission, however, that an attempt to produce immunity from "hog cholera" artificially by the use of the living germs of the disease, either through the stomach or through hypodermic inoculation is very objectionable, and involves a serious risk of more widely extending the disease and increasing rather than diminishing the already enormous losses therefrom. For every hog thus treated becomes, for a time at least, a centre of infection from which an epidemic may directly or indirectly spread widely. Furthermore, the use of the living germs seems, at least in many instances, to stunt permanently the growth of the pig. Experience acquired in recent years shows that the chemical products of certain disease-producing germs in artificial cultures possess the same power to create immunity as do the living germs themselves; and some incomplete experiments performed by ourselves and others seem to indicate strongly that the chemical products of the "hog cholera" germ in artificial cultures also possess a similar power.

If further investigation shall prove this to be an indisputable fact, then, in our opinion, a safe, harmless, efficient, and extremely practical means of preventing "hog cholera" free from any risk of thereby extending the disease and continuing the enormous losses at present suffered by our countrymen will soon follow.

We have reason to believe that the threshold of such an important discovery has already been crossed; and we, therefore, earnestly advise that thorough and exhaustive investigations be as rapidly as possible made in this direction, and without stint of money or hampering limitations of time.

The Sale of Tuberculous Flesh and Milk.—The *British Medical Journal* of July 6th, says that the Scottish Veterinary Association, at a recent meeting in Edinburgh, considered a motion submitted by Prof. W. O. Williams, "That the Society thoroughly believing that tuberculosis is a contagious disease, urge upon the Government—first, to stop the sale of milk from animals suspected of being infected; secondly, to suppress the consumption of meat from tubercular animals; and, thirdly, to give compensation for a limited number of years." In the discussion of this motion it was apparent that though there were differences of opinion as to how much of an affected animal ought to be condemned as unfit for food, all the speakers were in favor of visibly diseased parts being destroyed, and were of opinion that the milk from diseased animals was especially dangerous. They were also unanimously in favor of legislation to stamp out the disease, to secure proper inspection at abbatoirs, and moderate compensation to owners. A committee was appointed to draw up a memorial to Government to secure these objects and to take action in the matter with other societies.

Natural Purification of Polluted Streams.—The growing population of the many cities which discharge their sewage into rivers gives increasing importance to the question how great a degree of pollution is allowable in a stream of given flow, the water of which is to be used lower down for domestic or for manufacturing purposes. Mr. Rudolph Hering says that oxidation and decomposition of sewage matter were for a long time thought to be the main cause for the clarification of polluted rivers. To-day it is known to be but a minor cause compared with dilution and subsidence; and if the sewage is discharged in a fresh condition into a stream of water, its destruction is in part due to fish and other aquatic animals. Some of the refuse from stock-yards is disposed of, no doubt, in this way. Most of the decomposition, or oxidation as it is usually termed, of sewage is effected by the myriads of microscopic plants, microbes, or bacteria contained in both air and water, which at once seize upon dead organic matter. For purifying the

sewage discharged into a river, oxidation can be depended upon only to a limited extent, because of the comparative slowness with which it takes place. Subsidence of the heavier matter tends to clarify it before it flows many miles; dilution with a sufficient quantity of clean water prevents an offensiveness almost at once; but oxidation requires many days under continuous aëration of the river. From a comparison of data in regard to the actual purification of polluted streams we may draw the following inference: Rivers not to be used for water-supplies, but to be inoffensive to communities residing a few miles below, to remain fit for ordinary manufacturing purposes, and to sustain the life of fish, may receive the sewage from one thousand persons for at least every one hundred and fifty to two hundred cubic feet of minimum flow per minute, supposing that natural subsidence of the heavier matter takes place immediately below the town discharging the sewage. Beyond the above limit it appears to be advisable to resort to land or other filtration, or to chemical precipitation. — *Popular Science Monthly*, April, 1889.

A Royal Ophthalmologist.—H. R. H. DUKE CHARLES, M.D., of Bavaria, continues in the Bavarian Tyrol the philanthrophic practice of ophthalmic surgery, to which he devotes the spring months in the Austrian Tyrol. On the 3d instant, at the Tegern See, he performed with complete success his one-thousandth operation for cataract. For the occasion, which was a festive one, the surgical theatre was decorated with flowers by the sisters of the hospital, of which his Royal Highness is the patron and working president.—*Lancet*, July 13, 1889.

In Memory of Dr. James B. Hunter.—The New York Obstetrical Society has adopted the following resolutions on the death of Dr. James B. Hunter:

Whereas it has pleased Almighty God in his infinite wisdom to remove from our midst our friend and colleague, Dr. James Bradbridge Hunter, in the prime of his life and in the morning of his usefulness, therefore be it

Resolved, That, while we bow in submission before His supreme will, we recognize in His fiat the loss of one beloved and honored by us all for his gentle virtues and manly qualities, of one who will long be regretted, and whose place will forever remain unfilled amongst us.

Resolved, That, in his removal the entire profession of medicine in America suffers a loss which cannot fail to be appreciated by all connected with it.

Resolved, That the kind sympathy of this Society, for which he has done so much, and its sincere condolence be tendered to his bereaved family; and that it cause a copy of these resolutions to be spread upon its minutes, published in several of the daily and medical journals of the city, and transmitted to his immediate relatives.

Corrigendum.

To the Editor of THE MEDICAL NEWS,

SIR: Permit me to correct an erroneous phrase in the report of my paper read at the recent meeting of the American Otological Society, as published in your issue of July 27th. It reads: "Contesting the view that any colobomatous opening in the flaccid membrane *was* wholly negatived by modern embryologists;" whereas it should be: "Contesting the view . . . *as* wholly negatived." The change is slight, but it wholly perverts the cardinal meaning of my paper, which is essentially a protest against the assumption that the "foramen of Rivinius" is anything else than a pathological perforation.

Very respectfully yours, B. ALEX. RANDALL.

1806 CHESTNUT ST, PHILADA., August 5, 1889

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 30 TO AUGUST 5, 1889.

By direction of the Acting Secretary of War, leave of absence for seven days is granted ANDREW K. SMITH, *Colonel and Surgeon.*—Par. 12, *S. O. 178, A. G. O.*, August 3, 1889.

HALL, WILLIAM R., *Captain and Assistant Surgeon.*—Leave of absence for ten days is granted.—Par. 5. *S. O. 60, Headquarters Department of Dakota*, July 27, 1889.

ROBINSON, SAMUEL Q., *Captain and Assistant Surgeon.*—The leave of absence for two weeks, granted by Par. 11, S. O. 165, from these headquarters, is hereby extended ten days.—Par. 8, *S. O. 272, Headquarters Division of the Atlantic*, July 30, 1889.

MAUS, LOUIS M., *Captain and Assistant Surgeon* (Fort Porter, New York).—Leave of absence for twenty days, on surgeon's certificate of disability, is hereby granted.—Par. 2, *S. O. 273, Headquarters Division of the Atlantic*, August 1, 1889.

By direction of the Secretary of War, so much of Par. 1, S. O. 159, A. G. O., July 12, 1889, as directs LOUIS BRECHEMIN, *Captain and Assistant Surgeon*, to return to his station at the close of the encampment of the Illinois National Guard, is amended to direct him to report in person, not later than August 20, 1889, at Fort Robinson, Nebraska, for duty at that place.—*S. O. 174, Headquarters of the Army, Adjutant General's Office, Washington*, July 30, 1889.

HARRIS, H. S. T., *First Lieutenant and Assistant Surgeon.*—The leave of absence granted in S. O. 140, A. G. O., June 18, 1889, is further extended two months.—Par. 9, *S. O. 176, A. G. O.*, August 1, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING AUGUST 3, 1889.

BRYANT, P. H., *Assistant Surgeon.*—Ordered to temporary duty on iron clads, Richmond, Virginia.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM JULY 20, TO AUGUST 3, 1889.

HUTTON, W. H. H., *Surgeon.*—When relieved at Mobile, Alabama, to assume command of the Service at Baltimore, Maryland, July 23, 1889.

PURVIANCE, GEORGE, *Surgeon.*—When relieved at Baltimore, Maryland, to assume command of the Service at Philadelphia, Pa., July 24, 1889.

GASSAWAY, J. M., *Surgeon.*—Ordered to New Orleans, La., for temporary duty, August 2, 1889.

GOLDSBOROUGH, C. B., *Surgeon* —Granted leave of absence for thirty days, July 29, 1889.

VAUGHAN, G. T., *Assistant Surgeon.*—Orders to Norfolk, Va. revoked; to proceed to Cairo, Illinois, for temporary duty, August 1, 1889.

GROENEVELT, J. F., *Assistant Surgeon.*—Relieved from duty at Gulf Quarantine Station; ordered to Mobile, Alabama, for temporary duty, August 3, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, AUGUST 17, 1889. NO. 7.

ORIGINAL ARTICLES.

PRELIMINARY OBSERVATIONS ON THE BACTERIA IN ICE FROM LAKE MENDOTA, MADISON, WIS.

BY H. L. RUSSELL, B.S.,
OF POYNETTE, WISCONSIN.

DURING the winter of '88 and '89 experiments were conducted in the Bacteriological Laboratory of the University of Wisconsin to test the purity of the ice-supply used in the city of Madison, and also to repeat some observations, which had been made by previous observers, concerning bacteria in ice. The importance of the bacterial analysis of water has been well recognized, by the amount of care and attention which has been bestowed upon it. In the investigations carried on by the different boards of health, the biological as well as the chemical analyses are made to aid each other in determining the potability of water. Less labor has been bestowed upon ice; yet it is no less important. Ice has now come to be used in so many different ways that it is as necessary we should be supplied with that which is as pure as possible, as it is that our water-supply should be pure and wholesome. Our water-supply might be ever so good, but if we introduce into it an impure ice we run a risk as great as if the water itself was contaminated.

The popular notion, that water entirely purifies itself in freezing, not only with respect to its dead organic matter, but also as regards its living animal and vegetable forms, has been proved to be fallacious so many times, that it would seem to be a waste of time to recount the methods and results involved.

The problems connected with biological analysis are often many and difficult. Beside the extreme care which must be maintained throughout the whole work, the results obtained must be interpreted in a proper manner before they become of any practical value. To the popular mind, the word bacteria is closely associated with the idea of disease, so that when we find large numbers of these organisms in water we naturally look upon it with suspicion, but such is not necessarily the case. By far the larger majority of these microbes which we find in the earth, air, and water are perfectly harmless. They are saprophytes rather than parasites.

In water we find a group of these bacteria which are apparently indigenous to this medium. They grow and thrive better here than in any other culture. These "water bacteria," as they are called, play no *rôle*, as far as is known, in producing disease. In addition to these innocuous forms there are numbers of species of pathogenic germs, which are able to thrive, or, at least, exist, in water for a considerable time. The testimony of various observers is quite contradictory as to their ability to grow, especially in reference to the specific germs which cause cholera, typhoid, and anthrax. But the tracing of numerous epidemics of some of these diseases to contamination from water shows that great care should be taken in determining whether the water-supply affords any opportunity for the transmission of disease germs. The most common way for the introduction of these germs into the water systems of cities is where the supply is in any way subject to sewage contamination. This is particularly dangerous, as examination of water at any particular time may fail to reveal the specific germ of the disease, but the occurrence of one or two cases and the emptying of any dejecta, or any other contaminated material, into the sewer system may be sufficient to contaminate what before might have been regarded, by analysis, as pure water.

The water-supply of this city, being derived from deep artesian wells, affords very little chance for contamination. Examinations made from samples taken from delivery faucets of the water mains of the city gave on an average less than thirty germs per c.c., and all of them recognizable as harmless water forms. But in the case of our ice-supply, at first sight, safety is not so assured. The supply which is used in the city and that which is largely shipped to surrounding towns throughout the State, are taken from Lakes Monona and Mendota. From Mendota is taken the ice used for home consumption, and from this source was obtained all the samples which were examined. This lake is about six miles long, by four or five broad, and in many places is about one hundred feet deep. Monona is considerably smaller and much shallower. These two lakes receive all the filth and waste of a city of thirteen thousand inhabitants, Mendota receiving in addition the sewage material from the Wisconsin State Hospital for Insane.

The ice-supply of the city was subjected to quite an exhaustive analysis, to see if it was in any way subject to sewage contamination, and also to investigate several other problems in connection with bac-

teria in their relation to ice. Our inability to determine, ordinarily, whether bacteria in ice or water are pathogenic or not, would make a rule based on the numerical content of the water important, if such could be the case; but unfortunately this we cannot do with any degree of safety. Fränkel states that water containing more than fifty germs per c.c. should be subjected to some process of filtration;[1] but this is purely an arbitrary rule. A sample of water might contain only a few germs in which pathogenic germs were abundant, yet this water would be manifestly more dangerous than one which might contain a far greater number of the ordinary water forms. However, in the absence of a numerical rule we have still a method that may indicate the sought-for result. Where we find two or three, or, at most, only a comparatively few species of germs, we may quite safely assert that the water is practically free from sewage; but where a large number of different species are present it shows the possibility of contamination by foreign ingredients. The prevalent water bacteria are so universally present that most of them can be identified with comparative ease.

The observations upon ice were conducted in the following manner: From the interior of a large block of ice were taken several small pieces, which were washed in a stream of hot water, the temperature of which varied from 75° to 90° C., then rinsed in distilled water and placed in sterilized chambers. The ice was then melted, and before it was completely melted samples of it were drawn off by sterilized pipettes and mixed with meat-peptone gelatine and prepared according to Koch's well-known method. Three or four plates were made from each sample, so as to get the average of as many as possible. The plates were counted after two or three days' growth. No definite time could be taken, on account of the variation in rapidity of growth of colonies. They were allowed to grow as long as possible, the development of the liquefying colonies being checked by the addition of a drop of ferric chloride. It was found, by diluting some of the plates considerably with sterilized distilled water, and counting them daily from the first appearance of the colonies until they could no longer be separated, that the number of colonies increased about ten per cent. a day for three or four days. This makes quite a difference in the number of germs present and is probably caused by the wide variation in age and vitality of the germs.

Comparisons between lake water and freshly frozen ice.—Comparisons were made with the view of determining how much the bacterial content of the water was diminished by freezing. The ice used in the experiment came, in all cases, from the lowest layer, which was formed after February 18th. About this time a large body of ice was removed for the ice houses, and on this date came on a cold spell which lasted for quite a number of days, so that the ice was formed very quickly, and was very clear and transparent. Samples of ice used for this experiment were in no case frozen for more than five or six days. The aggregate results of this comparison are only indicated here:

Twenty-seven samples from lake water averaged 683⅔ germs per c.c.; thirty-five samples from freshly frozen ice averaged 270⅓ germs per c.c. The average number of germs per c.c. for each set of plates varied, in the case of ice, from 14 to 1249; in the case of water, from 3 to 3167.

According to these figures, only about sixty per cent. of the bacterial content was lost by freezing. Prudden claims that ninety per cent. are thus destroyed.[1] Fränkel has shown, however, that while in some cases the loss may reach as high as ninety per cent., ordinarily it is much less.[2] The variation in number of germs which occurs in different strata of the water is probably the cause of this wide variation, and the fact that different species are differently affected by freezing, makes the relation difficult to determine, except for each case.

Snow ice versus clear ice.—The popular belief is held that snow ice contains more impurities than transparent ice. This is, no doubt, due to the fact that we can detect any visible impurities much sooner in clear ice than in an opaque block. To see if this popular notion rested upon any basis of truth, experiments were made with snow and clear, transparent ice. One might quite naturally expect to find the snow layer well filled with air bacteria, as well as water forms which have welled up through the cracks in the ice, but such in our experiments was not the case.

Cultures made from freshly fallen snow, and from that which had lain on the ground for a considerable length of time, almost always contained quite a number of species of bacteria, while the snow ice, as a rule, contained only those species which were found in clear ice. This fact shows that air bacteria do not stand freezing in water as well as the indigenous water forms. Quite a large number of comparisons were made between clear, transparent ice and snow ice.

The following table indicates only in a general way the results obtained. The percentages give a fairer estimate for comparison than the figures themselves, but the evidence is not so overwhelming on either side as to settle the question decidedly.

[1] Arch. f. Hyg, Bd. i. S. 302.

[1] Med. Record, vol. xxxi. p. 344.
Zeit. f. Hyg., Bd. i. S. 308.

TABLE SHOWING RELATION BETWEEN

Clear Ice, 114 samples.		Snow Ice, 39 samples.	
No. of germs per c. c		No. of germs per c. c.	
Less than 10	15 per c		
Between 10 and 50	32.5 "		
" 50 " 100	10+ "	Less than 100	36 per ct.
" 100 " 200	12+ "	Between 100 and 200	20 "
" 200 " 1000	13+ "	" 200 " 1000	36 "
" 1000 " 5000	7+ "	" 1000 " 5000	5 "
5000 and upward	9 "	5000 and upward	2½ "

The local variation of the number of germs detracts from the value of these observations, but where as large a number of samples are taken as were secured in the above case, this element of error ought to be largely diminished. To overcome this as much as possible, samples were taken from contiguous parts of the same block with the following results:

TABLE SHOWING RELATIVE NUMBER OF BACTERIA PER C. C. FROM ADJACENT PORTIONS OF SAME BLOCK.

Snow Ice, 18 samples.	Transparent Ice, 17 samples.
31	192
497	14
115	80
395	6924

Numbers given are the total averages made per c.c. from each set of plates.

Numbers on horizontal line indicate the number found in adjacent portions of the same block.

Here we have as favorable conditions as it is possible to secure, and yet we can establish no definite relation. This variation, and particularly an excessive number, which is occasionally found, is due to the collecting of certain forms into gelatinous zoöglœæ, which dissolve with difficulty in water. Only by thorough shaking of the melted gelatine, with which the water is mixed, can this mass be separated, and the individual germs develop as single colonies in place of one large colony.

Influence of continued freezing upon bacteria.—Comparisons between the upper and lower surfaces of clear ice were made to see if any definite difference existed between ice which had been frozen for a longer period of time and ice just formed. Only samples taken from the upper and lower surfaces of the same block were used for this experiment.

TABLE SHOWING NUMBER OF GERMS PER C. C. IN CLEAR ICE.

From bottom, 32 samples.	From surface, 32 samples.
20	80
355	54
1249	618
71	163
13	10
14	9
141	763
Total aver. per c. c. 266	244

The conditions under which this ice was secured were such that the date of formation could be definitely ascertained, and all samples used were very clear and transparent. If continued freezing acts detrimentally on the bacteria incased in the ice, then the analyses of the upper layers of the ice, taken at different stages of the season, should show a slow but steady diminution in their germ contents. The following table indicates the number of germs per c.c. found in a clear, transparent layer just beneath the surface. The ice was frozen February 18th, and cultures were made from February 23d till March 14th, at varying intervals.

TABLE SHOWING NUMBER OF GERMS PER C. C. FOUND IN SAMPLES OF ICE THAT WERE FROZEN FOR DIFFERENT PERIODS.

	Number per c. c.	Days frozen.
February 23	95	5
March 1	763	11
" 2	20	12
" 8	7	18
" 11	149	21
" 12	10	22
" 14	40	24

Here again the results are so contradictory as to show that by analysis of natural ice no definite proportion can be established. The only way possible to secure definite results is to freeze water containing a known number of bacteria; yet, in this way the objection can be well urged, that we are not complying with natural conditions. If we take a fresh culture of some specific germ, and dilute it, and then freeze it, we will have the vitality of the individual cells much more nearly equal than exists in nature, even within the limits of a species, not to say a number of species.

Influence of freezing on different species of water bacteria.—With the two forms which were the most common in water and in ice, one of which is non-liquefying and the other a liquefying bacillus, the following observations were noted to see which was affected the most by freezing. Only the proportions existing between these two forms are given in the table.

PROPORTION EXISTING BETWEEN THE TWO SPECIES

IN WATER WAS			IN ICE WAS		
Non-liquefying bacillus.		Liquefying bacillus.	Non-liquefying bacillus.		Liquefying bacillus.
5/6	:	1	3.5	:	1
15	:	1	9	:	1
8	:	1	7.5	:	1
30	:	1	3.2	:	1
7.5	:	1	1.5	:	1
13.5	:	1	5.6	:	1
100	:	1	2.5	:	1
			18	:	1
			13	:	1
26		1	7		1

In every case but one the number of non-liquefying germs was greater than the liquefiers, and it was found that the proportion between the two species was much less before freezing than after.

Bacteria in snow.—In order to see if the bacteria of snow were similar to those found in ice, cultures were made from snow at different times. The number of species found in snow always exceeded the number found in ice, but the number of germs was generally much less, unless snow was taken which had lain quite a while upon the ground.

Samples were also taken from snow collected about six hours after the storm had begun, and also at its close, after twelve hours' duration.

Number of germs per c.c. (eight samples):

After 6 hours' duration . . . 6, 12, 3, 6; average, 7.
" 12 " " . . . 4, 6, 2, 0; " 3.

This indicates that the snow purifies the air of its germs to a large extent, and that at the close of a long storm the atmosphere may be practically devoid of germs.[1] These experiments were conducted in the neighborhood of inhabited buildings, so that the meagreness of germs is still more striking. No regular increase was found in old snow, although, as a rule, it contained a larger number of germs than did freshly fallen snow. In the cultures from snow a large number of moulds and oïdiums also developed, showing that these germs are very prevalent even in our winter air. Only occasionally did germs of this kind develop in cultures made from ice or water.

Relation to disease.—In the analysis of any considerable number of samples of ice one would naturally expect to find quite a large number of species present, but in these analyses such was not the case. By far the larger number of germs found were included in three species, and two of these furnished the major portion of the whole number. This applied not only to analyses made from Madison ice, but from ice taken from several different places throughout the State. Occasionally other saprophytic forms were found, but in only a few cases were any germs found that could be suspected of sewage origin. The colonies found in these cases were identical with those isolated from ice from the Milwaukee River, at Milwaukee, Wis., where it was known to be contaminated with sewage. This form was not pathogenic in its characteristics, but it shows a possibility of sewage contamination, and where such is the case safety is not absolute. As long as typhoid cases are unknown we might not suffer any danger from the use of this ice, but the introduction of contaminated material from one or two cases might be sufficient to produce the disease in an epidemic form. The two or three most prevalent forms were worked out and grown in various culture media. Their physiological characteristics, as far as they were tried, did not give any results indicative of pathogenic qualities. Their characteristics upon various culture media are not detailed here, as they probably belong to some described species, although they were not identified.

Briefly summing up the results which were obtained, they may be stated as follows:

1. No evidence of any species of pathogenic germs were found, although slight evidences of sewage contamination were present. Our inability to distinguish pathogenic from non-pathogenic germs, except by special differential cultures, leads us to lay considerable stress upon sewage contamination. Where traces of this are present, danger to a greater or less degree exists. The comparative absence of typhoid cases in this city for the past season would have made a special search for the specific germ probably fruitless. All the different forms isolated during the progress of the experiments were investigated with this point in view, but none of them yielded any results indicating the presence of the typhoid germ in the ice.

2. In testing the effect of freezing upon bacteria no very accurate relation is possible to be made. From the sixty-two cultures made for this experiment it was found that the bacteria in ice had decreased about sixty per cent. as compared with the number found in the water. This proportion is not constant and may range somewhat higher. In a general way it might be stated that from fifty to ninety-five per cent. of the germs present in the water are destroyed by freezing. The influence of continued freezing of the germs cannot be determined by analysis of natural ice. The variation in the number of germs present in different parts of the same block is so great that it is practically impossible to establish any relation between them. Even pieces of ice taken from the same block at the distance of only a few centimetres apart gave widely differing numbers of germs. This element of error is so large that it practically eliminates the use of natural ice for the determination of any of these problems, unless a very great number of observations are made. Of the two most prevalent forms found in either ice or water, the non-liquefying bacillus suffers much greater loss by freezing than the liquefying species.

3. To determine a proportion between snow and transparent ice, as regards their bacterial content, over one hundred and fifty analyses were made. It was found that the transparent ice, as a rule, contained less than the snow ice, but a larger number of germs per c.c. were found in clear, transparent ice in several cases than was found in any sample of snow ice. Here again this local variation prevents

[1] To prove this conclusively one would have to resort to analyses of air to determine the number of germs present in the air itself after the storm.

any relation being established between these two kinds of ice.

4. A number of different forms of bacteria were isolated from snow, in addition to several different species of moulds and oïdiums. The number of germs found was quite small, there being the least number present in snow which was collected at the close of a continued storm. Snow which had lain upon the ground for a length of time yielded a large number. These were deposited upon the snow from the air.

Bacteriological Laboratory,
University of Wisconsin, May 8, 1889.

THE PSYCHOLOGICAL FACTOR IN SELECTING A CLIMATE FOR INVALIDS.[1]

By EDWARD O. OTIS, A.B., M.D.,
of Boston.

"There is between the condition of the mind and that of the body," says a modern novelist, "an inter-dependence which cannot but be recognized by every physician." Recognize this fact we do, but I am inclined to think that we give less practical weight to it in our treatment of disease than we ought or might with profit to our patients. To adapt best the remedy, be it climatic or medicinal, to the case in hand, the psychological side of the question, as well as the physiological and pathological, must have its due consideration. Mental influences produce an infinite variety of bodily effects, from an anorexia to a *de novo* phthisis, insanity, or death even. In such a serious matter, then, as a change of climate for a less or a greater period, involving frequently a breaking-up of social and family ties, much more careful attention, it seems to me, should be given to the mental peculiarities and bias of the patient than often, apparently, seems to be the case.

If the *sana mens in sano corpore* is capable of infinite variations, how much more marked are the vagaries of the mind disturbed from its equipoise by the perturbing influences of bodily disease. How often this is illustrated in phthisis we all know. Peculiarities hardly noticeable in health are exaggerated in disease. Every person when sick is more or less of a child, as most of us from personal experience have realized, often to our surprise and chagrin. From a psychological point of view, then, we ought, it seems to me, to consider various factors when a change of climate is contemplated for an invalid, whatever the malady may be. In a general way they are these: *First.* The temperament or mental disposition. Is the patient naturally buoyant and happy, or, on the contrary, often depressed and inclined to take a Mantilinian view of life? *Second.* Previous habits and mode of life. Has the patient been active, fond of society, used to much excitement and frequent change; or lived a quiet, equable life, like the peaceful one of the country? *Third.* The amount of physical activity to which the patient has been accustomed. Has he led more or less of an outdoor life; does he have a fad in shooting, fishing, and the like; or is he of sedentary habits, devoted to books, art, or what not? *Fourth.* The matter of domestic ties. In the contemplated change will the invalid be compelled to sever close ties of relationship—a wife to be separated from her husband, a child from its parents, a mother from her children, etc.? *Fifth.* Is the patient to be placed in an environment of invalidism, where he will have his malady suggested to him continually, by seeing others sick and dying with it about him? *Sixth.* The age of the individual.

That it is important to consider all these elements, in selecting a climate for those patients whom we advise to change their skies, is obvious enough, I think; for that climate is the ideal one for the case in hand which best is adapted to his especial needs and conditions, even if it does not possess all the elements of an intrinsically ideal climate. Better a little less altitude and an agreeable environment; or more moisture, with an opportunity of indulging in one's pet hobby; provided always that the point yielded in the climatic conditions is counterbalanced by the point gained in mental contentment.

An analysis of that bundle of peculiarities which constitutes what we call one's temperament is no easy matter, and still, it seems that it ought to have careful study when a change of climate is under advisement. Here, for instance, is an individual who is a veritable melancholy Jaques, always thinking that the days are waxing evil and he with them, who has a "melancholy of his own, compounded of many simples, extracted from many objects." In ordinary health it requires the combined efforts of his friends and family to keep him in tolerable spirits. Once let him fall sick and he apprehends a speedy dissolution. Such a man is an unfortunate patient to deal with under any circumstances. When the matter, however, of climate comes up we should rather send him to a place of varied interests and attractions to divert and amuse him as much as possible, than to a Colorado ranche or an Adirondack village in winter. Another person, on the contrary, possesses one of those happy, sunny dispositions capable of extracting pleasure from all the little incidents of daily life. Such a one will content himself almost anywhere; and to whatsoever climate you decree him, there he will find a tolerable amount of contentment and happiness. When once he has conquered his nostalgia, you can venture to send him to such places as you would not dare to suggest to the former man.

Between these two extremes we have every variety of disposition or mental attitude, either natural or as

[1] Read before the American Climatological Society, June 24, 1889.

a result of the malady. Of course, it is a delicate question and one requiring much consideration how much weight we should give to this factor in our decision. The nervous, excitable person is often best consigned to a quiet, restful place, and the contrary is often best for one of phlegmatic nature, for to give him an interest in something may be the most important step toward his recovery.

One's natural disposition, to a great extent, shapes his way of life and determines his habits. Environment and intercurrent circumstances, however, are important elements, as we know, in the matter. We have only to consider, however, the mode of life as it exists when the patient comes to us, and to settle the amount of its influence in determining the kind of place and climate best for him. We are all creatures of habit, and so strongly and firmly bound by it, and yet so unconsciously, that we only realize it when we attempt to change or break the chain. Take the most familiar illustration, a business man accustomed for years to a daily routine in a city. Resources outside of his business he may have few or none—no hobby or favorite outdoor amusement. Send him away to a lonely place, or to any place, indeed, and he is wretched, the habit of his life is broken, and he realizes how strongly he was bound by it. If, however, it is possible to place him in a sufficiently favorable climate for his disease, and at the same time allow him to continue to some extent in the way of his former life—if, also, the malady permits it—for instance, sending a phthisical merchant to Denver, El Paso, Los Angeles, or where you please, and there indulge him in the semblance at least of following his former occupation, then, it seems to me, we supplement greatly the beneficial effects of the climate by the contentment of mind the continuance of his former habits of life gives.

Or, again, take a young woman, city bred and accustomed to much variety of life in the way of amusements and social diversion. It may be the wisest plan to send her to a place with an environment the reverse of all this, where the life is the simplest and most peaceful conceivable, like that of a western ranch or a small southern village. Assuredly it will be if she is suffering from neurasthenia. It may be, however, that to continue a limited amount of the old excitement, if I may so term it, may keep her in better mental equipoise than suddenly cutting it all off. Denver, St. Augustine, Fortress Monroe, Cairo, the Riviera, may be more curative for her than the quiet, isolated life of a mountain hamlet or a New Mexico ranch.

The tastes of a patient play a not insignificant *rôle* in his physical condition and well-being, and a disregard of them may vitiate the good results hoped for by the climatic change. Here, for example, is a person devoted to music; it may be that this very devotion is the cause of the phthisis or neurasthenia. Deprive him, however, of all opportunity of hearing a sonata or a symphony now and then, and he is wretched. Send him, on the contrary, to a resort like Colorado Springs, for instance, where he can gratify his taste occasionally, and in addition allow him his piano, with proper restrictions, and he will be happy, and far more readily and quickly adapt himself to the new and changed conditions.

Or, another is a botanist *con amore*. For him a place with a large and varied flora, such, for instance, as some portion of the Rocky Mountains or Southern California, will be more attractive and consequently more beneficial than a sea voyage or Davos. And so, in brief, by studying the tastes and inclinations of the invalid to be exiled, as good a climate may be chosen and in addition a point gained by the greater contentment the favorite occupation or amusement affords.

Here I will digress long enough to say that for these reasons, as well as others more directly climatic, it seems to me that it is of the greatest advantage for the physician, who frequently has to advise his patients where to go for a different climate, to have visited as many of the resorts as possible. He may not, probably will not, remain long enough to make any extended study of the climate itself. This has generally been done by the resident physicians, but he will—which will be of great value to himself and his clients—have found out the resources of the place, its attractions, amusements, the class of people his patients will be thrown with, and all the little data and detail as important in their way as the purely climatic side of the question.

The matter of length of residence in the climate selected depends on many considerations, principally on the kind, character, and extent of the disease. I shall only touch upon this subject here in so far as it relates to the psychological element involved. In maintaining a healthy mental equilibrium, so far as this is possible with an invalid, the diversion of change is a powerful factor. Some physician has said—I have forgotten who, that the invalid should change his residence every month, and there is much of truth in the saying. Now, within the area of prescribed climate a frequent change can often be attained. For instance, a patient who has had selected for him the climate of eastern Colorado, can change Colorado Springs for Santa Fé for a little time in the winter, and in the summer go up to the Estes Park or some of the many other mountain resorts, breathing all the time the same kind of air. Or, again, one who has had prescribed for him a mild sea air may vary the localities where he finds it. St. Augustine, Fortress Monroe, Santa Barbara, or a sea

voyage about the West Indies, all afford him his specific climate with the diversion of change and variety of scene. Moreover, these changes can frequently be made within a limited area, and with no great exhaustion from lengthy journeys, or large expense.

The manner of life as to physical activity is another and important factor, looked at from a psychological standpoint, in the selection of a place for one's patient from amongst those climatically proper for the case in hand. Some individuals will be active as long as the breath of life remains in them, and when wisely regulated, and excess is restrained, it is often better that they should continue to be so, even in their invalid state. Better let a mountain climber or a fisherman take some risk and climb and fish a little, than to wear out his life in desponding *ennui*. I recall the case of a poor fellow with advanced phthisis whose hollow cough kept the ranch awake at Estes Park, and who would still persist in his favorite amusement of trout-fishing whenever he was able to drag his emaciated form to the streams. When I left the Park I expected that a few weeks would see the end of him. What was my surprise to learn that he was still fishing there the following summer, and I trust that he is still somewhere whipping the brooks and so prolonging, not altogether unhappily, his precarious existence.

Those, on the contrary, accustomed to sedentary habits, as so many women are, and not a few men, it is more difficult to indulge safely in their proclivities; for a change of climate, for whatever disease, requires a more active life generally than the one they have been leading; nature, however, reasserting herself, aids us in this, for, in the natural state, man, like most other animals, is an active creature, and it is only the artificial caging that contravenes nature's law. While, then, the old order is changing, reverting to the normal, we can temporize a little to the benefit of the mental state by allowing something of the old life to continue, changing, if we can, the method and manner of it.

For instance, we can send a man given to historical research, and who spends much of his time in his library, to Santa Fé or to the old mission towns of Southern California, where he can investigate the bygone history of these old places, rich in the fascinating tales of Indian missions and self-denying padres. Naturally, in doing this he will be much out of doors and more or less active. So you gradually change his previous mode of life and indulge his mental inclinations.

Or, again, it is a woman who has too assiduously devoted herself to charitable work. Her work has become almost her life, and to separate her from it entirely is to destroy her aim and object in life. If she goes to Aiken, let her gather a class of colored people about her to teach a little, or visit them in their cabins à la friendly visitor. Or if to New Mexico, let her look up the Indians. So, again, you keep alive hope and interest in life, which, in its turn, keeps alive the body.

The separation of families and of intimate friends for a considerable period of time is a serious obstacle to the kindly influences of a healing climate. In cases where the social and family ties are of the closest, and the dependence of the patient upon those about him is great, it is a question in my mind whether enough is gained, by sending him long distances to some of the standard climates, to compensate for the loss entailed in mental stamina by the shock of the separation. In certain cases which have come under my observation, where, for instance, a wife has been sent from the east to Colorado, and could see her husband but once a year, or a daughter or son sent away from the rest of the family, it has hardly seemed to me that the climatic gain compensated for the loss of that peace and contentment of mind so essential for favorable progress in any chronic disease. Of course, individuals vary much in the manner of adapting themselves to circumstances and the inevitable. Where, however, the longing for the dear ones at home is extreme and continued, a spot nearer home with a climate less intrinsically ideal for the disease, but affording easy communication with the home friends, may accomplish better results; as, for instance, Sharon, in this State, or Lakewood, in New Jersey. Often it can be so arranged that members of the family can accompany the invalid, but sometimes not, as in the case—not infrequently arising—of a wife whose husband is confined at home by business or professional life, and upon whose labors the very ability to enjoy the new climate depends. Most people, it seems to me, hardly realize the shock which the separation from friends and familiar scenes produces, especially upon those of middle age, and upon those who have few resources within themselves. If a certain climate is considered a *sine qua non*, then it would seem wise in such cases to insist upon certain of the home friends accompanying the invalid, or, better, the whole family. The roaming life of the prairie schooner class, where the whole household go along, has other advantages besides its idyllic character; they carry home with them.

An environment of invalidism is almost inevitable in most of the well-known health resorts. Besides its injurious influences in other respects, mentally it is in many ways unfavorable. To be sure, calamity in a way makes us all akin, and in thinking of and helping an unfortunate brother our mind is diverted from our own misfortune to our benefit. On the other hand, however, to be amongst many others suffering

from the same disease as ourselves, in its varying degrees and phases, must often react unfavorably upon our own condition. Our disease is kept constantly before us; and I have noticed that a community of invalids seem morbidly eager to discuss their own symptoms, and learn to watch and note the smallest variations in their condition. When thus the mind is kept constantly upon the disease, the progress is naturally less favorable. Again, death must often occur in a community of invalids, which reminds, most emphatically, the survivors of the uncertainty of the issue in their own case. So the dread and doubt are kept constantly before them, and their mental attitude is anything but one of peace and calmness, which is of paramount importance if one would obtain the best results. I must confess that this seems to me to be a serious objection to such health resorts as are exclusively devoted to invalids and to those of the same disease; resorts, moveover, which are of narrow confines, like Davos, for instance. Is not the objection all the greater to sanitaria, where many invalids are under one roof, particularly if the disease is phthisis? It seems difficult, nevertheless, to obviate this. Naturally the physician desires to send his patient, and he to go, to the climate supposed to be best suited to his disease, and so, as a result, they collect at the few well-known localities. A wider and better personal knowledge of climates and a careful study of the individual patient can do something toward remedying this. The same or as favorable a climate as the one we think best adapted to our patient, and represented by a health resort centre, can often be found which has not yet been invaded by the army of invalids, and which, at the same time, possesses favorable conditions enough in other respects, such as food, lodging, companionship, diversion, and the like, to answer to the demands required by our patient. In the great climatic range of Colorado it would be pretty easy to do this, it seems to me, or in the high pine belt of the South, though here the matter of good food and accommodations might be a difficult one. Again, a sea voyage might accomplish it. Certain it is that the influence of an environment of strong, healthy, and consequently cheerful, individuals about an invalid is more conducive to rapid improvement and hopeful anticipation, than one of invalids with the constant reminder of "Memento mori."

Lastly, the age of the patient as a psychological factor is important in considering the effect of the change to be made. "Hope," it is true, "springs eternal in the human breast," but it springs more exuberantly in the young human breast, and we can count more upon this universal element in human nature in the young than in the middle-aged and older. The adaptability of the young to changed and new conditions is great, and with them we can venture on more radical changes than with the older, who are bound by long association to friends and places. Not infrequently it may be a question whether, with our older patients, it is wise to take the risks of an abrupt and radical change. At all events, if it is decided upon, more care should be taken to surround the invalid with some semblance of his former environment, so that he may more readily take root in the soil to which he is transplanted. After all, to keep him within a shorter radius of home may seem the wiser thing, the greater contentment and hopefulness retained by so doing compensating for the loss incurred by being in the less favorable climate.

In conclusion, I hope that I have emphasized some points often too lightly passed over in the very serious consideration involved in settling the question of change of climate for our patients. From my own experience and observation, it has seemed to me that these psychological factors, as I have called them, have not been given as careful consideration as their importance demands. Ours is a material and scientific age, and medicine feels the influence of the time and age; but there is a spiritual as well as a physical side to the human entity, and he is the wise physician who duly weighs in his considerations and decisions the influences of the spiritual side as well as that of the physical. "The doctor," says Wilks, "soon finds that in treating his patient the practice of medicine is not only one of physic, but of psychology, and that the effects of his drugs depends as much upon the constitution of the patient's mind as his body."

THREE RARE CASES ILLUSTRATED. MULTIPLE PAPILLOMATA OF THE VELUM; IMMENSE FIBROID TUMOR OF THE TONSIL; AND FIBROID TUMOR OF THE NASAL SEPTUM.

BY GEORGE M. LEFFERTS, A.M., M.D.,

PROFESSOR OF LARYNGOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

THE cases illustrated herewith are of a rarity that justifies me in presenting them.[1]

The physical appearances of the tumors are well shown in the drawings, and require, therefore, no detailed description.

The differential diagnosis, in cases as well marked and distinctive as these, presents no difficulty; macroscopical signs alone will suffice for the recognition of their true nature.

Although papillomata are the commonest variety of true neoplasm of the fauces, a growth the size of

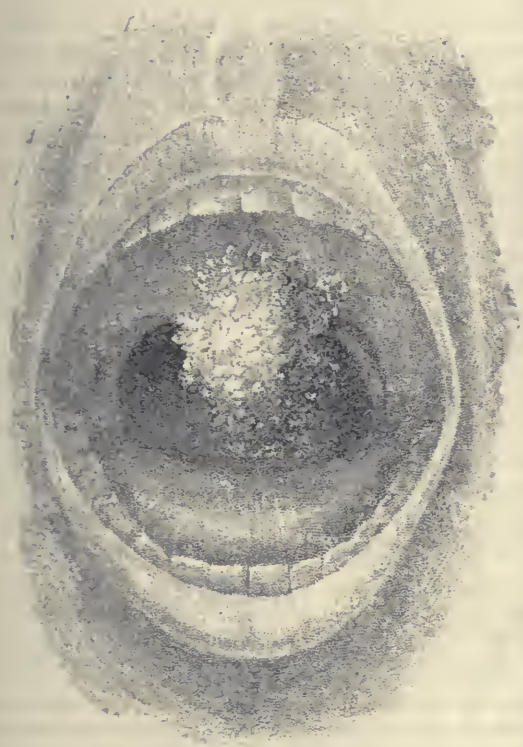
---

[1] Eleventh Annual Congress of the American Laryngological Association.

that shown in the present instance must be very unusual. It occurred in

Case I.—A girl, æt. sixteen, who only accidentally noticed its presence in her throat when it had attained fully one-third of the dimensions here shown. Thereafter it grew rapidly and in eight months time resembled the drawing. Little or no inconvenience was caused, dysphagia never being present and but slight interference with the timbre of the voice.

Fig. 1.



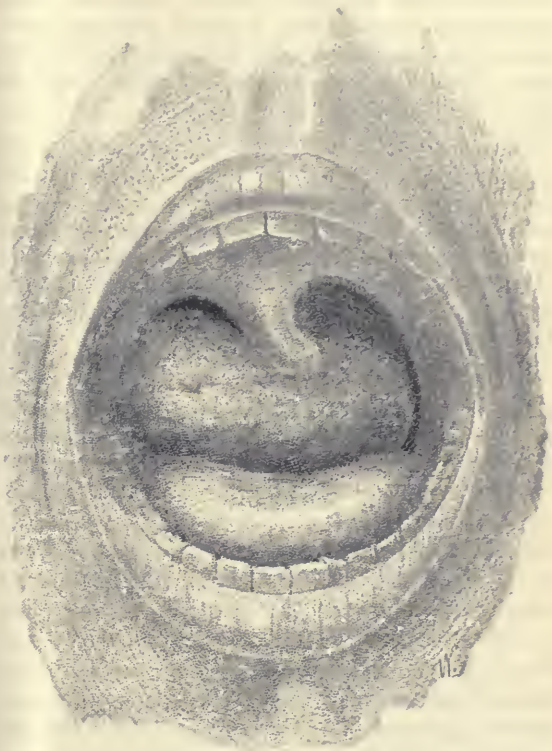
Papillomata of the velum.

After anæsthesia of the parts by cocaine the multiple tumors that made up the mass were removed by scissors curved on the flat. The uvula was not involved and was left intact. A superficial stellar cicatrix now shows the former site of the sessile portions of the growth. There has been no sign of recurrence.

Case II.—A man, æt. fifty-five, who for many years had been aware of the existence of a slowly growing tumor in his throat; but increase in size being gradual, and no pain, interference with deglutition, nor embarrassment in respiration having, until lately, been experienced, no operative procedures had been allowed.

Now, at the date of examination, dyspnœa at night when in a recumbent position, and difficulty in the deglutition of both fluids and solids, the growth descending during the act and blocking the path to the œsophageal mouth, demand surgical relief. From the region of the right tonsil—the latter being involved in the growth—sprang the large, dense tumor, covered by a thin non-vascular mucous

Fig. 2.



Fibroid tumor of the tonsil.

Fig. 3.

Fibroid tumor of the nasal septum.

membrane, that is shown in the drawing. It possessed a more or less distinctly defined narrowing at its point of attachment, which rendered it an easy matter to encircle it at this point with the wire of the écraseur. This was done by Dr. C. E. Beebe and the tumor thoroughly and neatly removed. No hemorrhage.

CASE III.—Man, æt. thirty-six. I am acquainted with no instance in practice or literature of a *fibroid* tumor springing from the *nasal septum*, save the one here shown. The little tumor was hard and dense, its covering a thin, vascular, mucous membrane, and it was distinctly pedunculated by a delicate pedicle, the latter attached to the nasal septum, just above the muco-cutaneous junction, in the right nostril. The sole symptom caused by its presence was occlusion of the right nasal passage, the discomfort of which had caused the patient to seek advice. He was unable to state how long the growth had existed.

The pedicle was cut through with scissors and the tumor removed.

THE PATHOLOGY OF HEMOPTYSIS FROM CHRONIC PULMONARY DISEASE.[1]

BY G. M. GARLAND, M.D.,
INSTRUCTOR IN CLINICAL MEDICINE IN HARVARD UNIVERSITY

FOR the convenience of discussion, we will assume that we are considering only cases of true pulmonary hemorrhage, wherein all extraneous sources of blood supply, such as aortic aneurism, cardiac rupture, etc. have been ruled out of the symptoms of the case. We can then roughly divide pulmonary hemorrhages into two groups: (*a*) cases which present physical signs of pulmonary disease, and (*b*) cases in which no physical signs of changes of lung structure can be found.

Our knowledge of the pathological causes of hemorrhage in the first group has been thoroughly digested and organized by Virchow, Thompson and others. We know that hemorrhages proper in this group come from deficiencies in the pulmonary system of vessels, while bronchial hemorrhage, or leakage from the arterial supply of the bronchial tubes, is slight in quantity and merely streaks the accompanying secretions of those tubes. No inference can be drawn from the color of the blood as to its source, because the oxygenation of the pulmonary blood is so rapid that it is expectorated red. Blood which has lain stagnant in the tubes over night may, of course, look dark. Traumatic injuries of the vessels, aneurism, and diapedesis are familiar causes of hemorrhage in tuberculosis. According to Virchow, however, the greater number of hemorrhages in phthisis come from ulceration of the vessels.

In the second group, we find no clinical evidence of changes in the pulmonary parenchyma. We may, indeed, locate the presence of blood in the bronchial tubes, but this does not necessarily determine the seat of the leakage, because the blood is rapidly drawn off into by-ways and side-issues, quite remote from its point of departure. The presence of hemophilia, scurvy, and habits of excessive drinking would lead one to consider alterations in the composition of the blood itself as a possible cause of hemorrhage. Some evident point of departure for an embolus, the possibility of thrombosis, the previous inhalation of irritating fluids, are matters for deliberation in diagnosis.

Pulmonary congestion is not of itself alone a prolific cause of hemorrhage. Thus veritable hemorrhage is a rare complication of pneumonia, and yet that disease produces high grades of congestion. In whooping-cough and congestive bronchitis the amount of blood is rarely copious, and is the result of violent coughing. One writer has observed that hemorrhages are rare in acute maladies of the respiratory apparatus, and any pulmonary congestion which is not symptomatic of a cardiac affection is rarely accompanied by the expectoration of veritable blood.

This brings us to the consideration of the heart as a factor of pulmonary hemorrhage. Fernet says: "After tuberculosis, heart disease exerts the greatest influence in producing hemoptysis," and mitral troubles stand pre-eminent in the causative list. Here, also, the element of exertion comes in, upon which Thompson lays so great stress. He says:

> "The influence of exertion in the etiology of blood-spitting has not received so much attention as it deserves from the importance and frequency of the event, for cases occur in which hemoptysis has followed some unusual exertion, in which no positive proof of pulmonary disease can be shown to exist. . . . Prolonged exertion in walking and running leads to excessive hyperæmia of the lungs, consequent upon the rapid emptying of the veins into the right side of the heart, and either the lungs give way under a condition of general congestion with extravasation of blood, or local apoplexies of a similar kind occur; or, on the other hand, the heart may become overstrained, and give way in a condition of general dilatation."

The following case, under my own observation, will illustrate the pertinency of the above quotation:

Mr. A., thirty-seven years of age, had smoked to excess for many years, and also had a history of spitting blood about twelve years ago and also once or twice since then. On August 26, 1887, he attended a convivial dinner, and on the next afternoon he played lawn tennis very energetically. That evening he raised a considerable amount of blood, and again the next day. On August 29th, I examined him, and found a few coarse and medium râles in the left sub-scapular space, and a slight diminution in the volume of resonance over the same region. There were systolic murmurs in the aortic and mitral areas, and the heart apex was considerably outside the mammary line. The bleeding stopped

[1] Read before the American Climatological Association, June 25, 1889.

in a couple of days, and the patient was advised to avoid all smoking and all active exertion.

My notes for January 29, 1888, report, "No râles or dulness in the left sub-scapular space. Heart more regular, and murmurs faint."

In February, 1888, after walking against a strong, cold head-wind, he had another hemorrhage, with return of physical signs in the left sub-scapular space. The signs faded out more slowly this time.

On March 13, 1889, I found no dulness and no râles. The patient is strong and well, and is heavier in flesh than ever before. About six weeks ago, however, he raised a few mouthfuls of blood on the day following a plunge into the cold-water tank of the Athletic Club. The temperature of the water was about 68° F.

Still another group of cases calls for our attention, wherein none of the above conditions can be established. The lung simply bleeds, and there is nothing else to show for it. Some of these cases eventuate in phthisis. Some do not, and the crying appeal is to know if such cases are tuberculous at the outset. I can find no decisive answer to this question, though both sides have been maintained with hot fervor. The fact that all cases do not develop into phthisis is no argument, because all cases of tuberculosis do not advance to phthisis. The only solution of this problem lies in a critical microscopical search for bacilli in every fresh case of hemoptysis.

There is one suggestion regarding pulmonary hemorrhage which has been advanced by Virchow and others, but which has received less attention from clinicians than it deserves; I refer to the influence of the nerve centres. Virchow says: "If we cannot deny, therefore, the greater frequency of hemorrhage by certain weather conditions, especially by weather changes, yet it appears that here also a contributing cause (Wallungszustände) must be sought, which possibly lies in the nervous system."

We have already seen that pulmonary congestion, *per se*, is not sufficient for hemorrhage, inasmuch as pneumonia and other acute congestive processes of the lungs are distinguished by the rarity of hemorrhage. Moreover, Cohnheim has shown by his experiments upon embolism, that mere congestion is ineffective for bleeding in other organs. He induced an artificial embolism in the frog's tongue, by introducing small particles of wax into its circulation. The first effect was a severe congestion in the neighborhood of a vessel occluded by a bit of wax, but no hemorrhage occurred. Not until three or four days later was a hemorrhagic infarct formed; the blood cells then did not extravasate indifferently, but all of them passed through selected points and grouped about the same. These points were not otherwise distinguishable in their appearance. Hence, Cohnheim concluded that diapedesis is not due to the presence of a congestion, but to changes in the constitution and resistance of the vascular walls.

Admitting these facts, we ask if similar changes in the condition and resistance of the vascular walls can be wrought by any perversion of nerve influence alone, and we receive an immediate answer in the affirmative. I need only refer to a few illustrations. We are all familiar with the ecchymosis which forms on the under lid of suicides when the bullet has pierced a certain part of the brain. Schiff has shown that lesions of the cerebral peduncles can determine ecchymosis in the mucous membrane of the stomach; Brown-Séquard has produced hemorrhages in the lungs by lesions of the pons; Strauss speaks of the ecchymoses tabetiques upon the extremities following severe pain; Faisans and Kellar describe subcutaneous hemorrhages resulting from great moral commotion in neuropathic persons; vicarious menstrual hemorrhages are a common experience, and it is interesting in this connection to note that out of two hundred cases collected by Puech, hemoptysis figured twenty-four times—*i. e.*, in twelve and one-half per cent. Great weight is laid by Virchow upon a certain condition of the arteries themselves, which he called Wallung, or orgasm, and he evidently believes this Wallung to be under the direct control of the nerves. Affluxus of blood, he says, to the locality of an irritation, does not comprehend to-day the history of the blood Wallung. Of course, Wallung occurs upon irritation, but it is not always limited to the locality of the irritation. It may appear sympathetically at points greatly remote. Illustrations of this condition are observed in the pulsatio epigastrica of hypochondriacs; in the heat-flushes of women during the climacteric; in the pulsations of the head in cephalalgia; in the throbbing of a temporal artery with the toothache. Moreover, this sensation of Wallung is also felt in the chest and sometimes precedes a hemorrhage which removes the disagreeable sensation, according to the evidence of patients.

In conclusion, therefore, I would say that I believe that a more careful discrimination of our cases of pulmonary hemorrhage, would reveal some of purely neurotic origin.

HOSPITAL NOTES.

JEFFERSON MEDICAL COLLEGE HOSPITAL.

SERVICE OF J. M. DA COSTA, M.D.

(Reported by E. P. HERSHEY, M.D., Clinical Assistant.)

PSEUDO-HYPERTROPHIC PARALYSIS.

P. H., ætat. nine. For over a year has been under observation. He is now barely able to walk. When he first began to walk, it was with great difficulty. There is no history of spasm or acute attack. His walk is a

curious waddling one, the feet turned in, and he steps on his toes. The manner in which he gets up and stands on the tips of the toes makes us suspect at once that there is something other than mere paralysis. Removing his clothing, we are at once struck with the disproportion in the size of the muscles of the legs. The enormous increase of the muscles of the calves, not simply posteriorly but laterally. The bones are not enlarged, and there is perfect symmetry in the enlargement on both sides. The calves are very hard and firm; there is no sensitiveness in the muscles. Each calf measures ten and a half inches in circumference. He has been walking on his toes only during the past six months.

The muscles on the back of the thigh are dwindling; there is some hardness of the hamstring muscles, mostly on the right side. Both the biceps and triceps are small; there is certainly no enlargement. Has great difficulty in rising from the floor; first he gets on his hands and feet, then places one hand on his knee, then the other; the hands then, one after the other, are placed on the thigh, and he then rises with great exertion.

They may be other muscles implicated. Examining the upper extremities, we find the pipe-stem arms, the dwindled biceps, the same hardening of the triceps as was found on the legs. The inferior portion of the pectoral muscles is atrophied, the left side is extremely small. In the lower part there is apparently no muscular structure; this is not so marked on the right side. The infra-spinatus is not hypertrophied on either side. There is some atrophy of the latissimus dorsi muscles. The right shoulder is slightly higher than the left; there is no marked spinal curvature—evidently too early in the disease for this.

The boy is very bright. There is no disease of the heart. Its action is distinctly irregular: a series of slow beats, followed by rapid ones, 90 in the minute. The first sound is short, the second sound is exaggerated. The eye-grounds have been examined with negative results. The tongue is large and slightly coated; appetite good; bowels are regular.

Microscopical examination of the muscular tissue, taken from the gastrocnemius muscle of the right side by means of the muscle trocar, shows the muscular fibres to be in a condition of granular degeneration; an increase of connective tissue, oil globules taking the place of muscle cells; much of the muscular striæ lost, and here and there a narrowing of the fibres.

Here we have a disease that has slowly progressed from infancy, but was only made manifest to those about him when he first attempted to walk. The boy is of the classical age for what we have here, the rare malady, pseudo-hypertrophic paralysis. This affection usually occurs between the ages of three and ten. If it does not develop until the child reaches its tenth year, it is apt not to happen. This is not absolute. It may come on at the age of puberty, but in the vast majority by the tenth year the disease has so fully developed as to be readily recognized. This case is not coexistent with any cerebral or spinal lesion. There is no history of tardiness in the mental development, no history of convulsions. We find the spinal nervous system not quite normal. A little perverted sensibility in the legs, no anæsthesia. A striking point is the absence of the patellar tendon reflexes; there is absolutely no response. In our electrical examination we find marked diminution in response both to the faradic and galvanic currents, in the inferior spinatus, the biceps and triceps, the glutei, and the extensors of the feet. In the vastus internus there is scarcely a perceptible response; the gastrocnemii respond.

The seat of the lesion is not in the central nervous system. It is inherent in the muscular system. There is a possibility that it may be in the periphery of the nerves. The reasons for the assertions are: first, the age at which the disease manifests itself. All degenerative lesions of the nervous system, except essential paralysis of infancy, happen, not in children, but in adults. The very age, therefore, is an argument against a central lesion. Again, another strong argument against it is, that the autopsies made, summing up all our knowledge on the subject, are negative in regard to changes in the anterior cornua. The affection is essentially muscular; but we need further observations on the possibility of lesions of the peripheral nerves. The absence of reflexes is very significant.

The disease is strongly hereditary. In this case we have been unable to elicit any family history; this is the only child in a family of six that has the disease. It is apt to be transmitted through the mother. While it may go through the family, the mother herself escapes, the girls escape, and the boys take it.

Treatment.—There have been no favorable results in trying to modify the disease by means of alteratives. Indeed, no internal treatment is of much avail, If anything, Fowler's solution, gtt. ij t. d., and the dose gradually increased may be tried. Careful exercise; massage; mild faradic currents to get muscular action without altering the tone may also be used.

MEDICAL PROGRESS.

Hot-air Inhalations in the Treatment of Phthisis.—Since the valuable contributions of Cornet, the prophylaxis of tuberculosis has assumed a reasonable and applicable form, yet the profession feels almost as much in the dark as ever regarding the therapeusis of this dread disease. Although there is perhaps no other disease for which there are so many reported cures, yet we are forced to confront the fact that there is no disease the prognosis of which is so doubtful and discouraging. Still, medical science is actively seeking for some efficient therapeutic method. Of investigators there is indeed no lack.

Notably among the most recent methods of treatment is that of hot-air inhalations first suggested by Weigert, who patented an apparatus for this purpose and published a popular treatise entitled, "Consumption and its Cure." His method has already been extensively investigated.

RENZI[1] carefully noted the physiological effects of the inhalation of air at a temperature of 284° to 329° F., and found that the respirations were accelerated and the pulse quickened. He then applied the treatment to several patients suffering from phthisis, and arrives at the following conclusions:

1. The inspired air must, in order to exert any beneficial action, be of a very high temperature. Inhalations

[1] Morgagni, No. 17, 1889, and Centr. f. die gesammt. Ther., June, 1889.

of air at a temperature of 110° to 120° F. have no influence whatever.

2. Inhalations of air at temperatures varying from 176° to 320° F. were endured without inconvenience to the patient.

3. The minimum temperature for the inhalations should be about 320° F. Each *séance* should last from fifteen minutes to an hour.

4. In one case the inhalations were followed by hæmoptysis, but, as the patient frequently had had hemorrhages prior to the inhalations, the symptoms could not be positively ascribed to the treatment.

5. In every case in which the treatment was employed, there was a marked improvement in the general condition of the patient and an increase in strength.

6. In a few cases there was an increase in the bodily weight and a decrease of the number of bacilli in the sputum; both the action of the heart and the respirations were increased; there was also a rise in temperature.

According to the above conclusions, one would be led to consider the treatment merely palliative.

The results of Dr. Kohlschütter[1] are, however, more definite, and confirm the results obtained by Weigert. Kohlschütter advises the inhalation of even hotter air than that used by Renzi; the thermometer on his apparatus registering as high as 482° to 572° F. during the application of the treatment. Of course, the air actually inspired was much lower than this; still the temperature must have been very high, as the expired air was 110° F.

Kohlschütter's experiments extend over a period of seven weeks, during which time numerous patients were subjected to the treatment. The principal results obtained by him were, first, marked increase in the expansion of the chest; in one case the increase being three inches. Second, where a pleuritic exudation had existed, this disappeared, likewise râles and other symptoms of abnormal breathing. Third, the depth of the respirations was also materially increased. Fourth, microscopical examination showed a decided decrease in the number of bacilli in the sputum. Most notable, also, was a change in the bacilli themselves; whereas, prior to the treatment the bacilli were found equally distributed all through sputum in the typical "row of beads," as well as the flat form, they were, after the treatment, found only in clusters of three and four, and the flat form were no longer to be found.

A slight rise of temperature, similar to that noted by Renzi, was also observed by Kohlschütter; the latter investigator also observed that the respiration became slower, as well as deeper. Shortness of breath entirely disappeared in all cases. At first expectoration was considerably increased, but after a continuance of the treatment it became greatly lessened. The appetite was invariably improved, and the patient's weight increased. Kohlschütter is still actively investigating the subject.

The most recent results obtained from this treatment are those of Dr. George G. Sears, of Boston,[2] who reports four cases which he treated with hot-air inhalations, the temperature employed being about 392° to 428°. His experiences are far from confirming those of Weigert, Renzi, or Kohlschütter. Briefly stated, they are as follows: In one case temporary improvement was quite marked, but at the time the treatment was discontinued there had been a further advance of the disease, and for the first time in her illness hæmoptysis occurred. In one case the inhalations were omitted after one week, owing to salivation and soreness of mouth, with a loss to the patient of three pounds in weight. In another case there was also fairly steady improvement in the general condition of the patient, but without corresponding improvement in the physical signs. She had, however, already begun to improve before the inhalations were resorted to. Five days after they were discontinued, death resulted from hemorrhage. In the fourth case the condition of the patient remained unchanged, except that during the treatment blood was found in the sputum for the first time. Although Sears in every case carefully subjected the sputa to frequent microscopical examinations, no decrease in the number of the bacilli was noted.

In conclusion, we may draw the following inferences:

1. Inhalations of air at a very high temperature (from 350° to 360° F.) are capable of producing, in many instances, a marked improvement in the general condition of phthisical subjects. The permanency of these improvements are, however, extremely doubtful.

2. The influence of hot-air inhalations upon the growth of the tubercle bacilli is uncertain. It is probable that the bronchial secretions are sterilized by the inhalations, but their influence upon the bacilli deeply imbedded in the pulmonary tissue is most doubtful, as the inspired air by the time it has penetrated into the deep lung tissues becomes so cooled that any germicidal property is highly improbable.

3. Symptoms of hæmoptysis having been observed to follow the use of the inhalation, indicate that great caution should be used in the application of the treatment.

4. The treatment, at best, should be considered palliative or prophylactic rather than curative.

Treatment of Uterine Cough.—The *Revue Gén. de Clin. et de Thér.* of June 27th states that valerianate of quinine will be found most valuable in the treatment of uterine cough. Its beneficial action is ascribed to its antispasmodic properties, as the affection itself is of a reflex nature. The drug may be prescribed either in solution or pill form. If the former is used, the addition of an infusion of black coffee will be found valuable.

I.

℞.—Valerianate of quinine . . grs. xv.
Infusion of black coffee . . f℥jv.
Simple syrup . . . . f℥jss.—M.

Sig.—One, two, or three large spoonfuls after meals.

II.

℞.—Valerianate of quinine } . . s. a.
Extract of quinquina }

Divide into ten pills.
Sig.—One pill after each meal.

Indications for Iridectomy and Sclerotomy in Glaucoma.—Dr. Loshechnikoff, writing in an ophthalmological review, published at Kieff, gives a *résumé* of 284 scle-

[1] Inter. klin. Rundschau, No. 10, 1889.
[2] Boston Medical and Surgical Journal, July 11, 1889.

rotomies performed by him while attached to the ophthalmic clinic in Moscow. The operation employed was Wecker and Mauthner's double sclerotomy. There were eight cases of acute glaucoma, sixty-eight of chronic glaucoma from inflammation, ninety-three of absolute glaucoma, seventy-one of incipient, and eleven of simple glaucoma. To each series is added a table of effects on tension and sight. The effect is called "excellent" when T. (tension) becomes normal, or less than normal, and central sight increases; "good" when T. decreases and V. (vision) remains the same; "medium" in cases of *status quo ante*, or when V. is somewhat worse, but T. decreased, or when there is a little improvement of V. with permanent T.; "bad" when V. is worse and T. permanent. In Table III., which deals with absolute and degenerative glaucoma, the author often says: "V. improves," "V. remains unaltered," though we are accustomed to use the expression "absolute" only in complete blindness from glaucoma. The author, however, claims for this series the best results—no less than 82 per cent.

The following are some of his conclusions: Iridectomy is indicated in chronic and subacute glaucoma. In absolute glaucoma, with symptoms of degeneration, sclerotomy is indicated. In acute glaucoma sclerotomy is a preliminary operation, to be followed generally by iridectomy. Sclerotomy is, for the sake of appearance, preferable to iridectomy, and holds out better prospects for the improvement of sight. It is consequently indicated in incipient glaucoma. In simple glaucoma sclerotomy is preferable. In all cases of imminent prolapse of the vitreous, and especially in congenital hydrophthalmus, sclerotomy is indicated. In secondary glaucoma iridectomy is always preferable. It is absolutely necessary to use eserine before sclerotomy.—*The Lancet*, June 22, 1889.

Laparotomy upon a Newborn Infant.—A successful laparotomy for umbilical hernia on a child but one hour old, is reported by DR. PHŒNOMENON, of Kasan, in the *Revue Gén. de Clin. et de Thér.* of July 11th. The child was born with a large umbilical hernia, and, within an hour after the ligation of the cord, was chloroformed and operated upon. Antiseptic precautions were carefully observed, the abdominal cavity sterilized, and the sac, peritoneum, and wound sutured successively. Recovery was rapid, complete, and devoid of any complications. Such serious operations in so young a subject are still among the rarities of surgery.

Salve for Scrofulous Keratitis.—DR. SAINT-GERMAIN gives the following salve for scrofulous keratitis in *L'Union Médicale* of July 6th:

℞.—Yellow precipitate of mercury . grs. xv.
Vaseline . . . . . ʒiij.—M.

With the aid of a pair of pincettes, or a paper spill, a small quantity (about the size of a pea) of this salve should be placed under the lid, and then the latter gently rubbed so that the ointment becomes spread over the entire surface of the eye. The result will be most satisfactory.

Local Application of Chloroform in Epididymitis.—DR. THEODOR CLEMENS, of Frankfort, in an interesting paper communicated to the *Allgemeine medicinische Central Zeitung*, describes the great benefit he has obtained in cases of epididymitis, both specific and non-specific, by means of chloroform locally applied. He regards as most unsatisfactory the treatment of the affection by other methods as compared with his own, which he has employed now for a great many years. It consists in laying some cotton-wool saturated with chloroform and spirit at the bottom of a large glass vessel, into which the genitals are then put and packed round with dry cotton-wool, the buttocks and thighs forming a cover, this application being continued for from fifteen to twenty-five minutes, and repeated two or three times a day.

Pathologically, he considers venous congestion of the epididymis and the cord through retention of semen a predisposing cause of the disease. He also considers epididymitis as very likely to occur when gonorrhœa has been contracted in excessive venery.

He mentions a case of treatment by chloroform thirty-six years ago, not of epididymitis, but of periodical "heat" occurring in the human subject. The man used to suffer periodically from a form of orchitis, during which the testes felt hot and swollen, and the plexus pampiniformis was full and turgescent like a varicocele. He was ordered the local application of chloroform three times a day, from fifteen to twenty-five minutes each time, but the first time he bore the chloroform for nearly thirty-five minutes, after which the pain of the severe attack completely ceased and the swelling considerably decreased. This treatment lasted three days, during which time he was able to walk about, the cotton-wool which had been used for the chloroform being put into the suspensory bandage and the testes covered with it. After that both the swelling and sensibility disappeared. Another case is mentioned, in which epididymitis had been caused by the continuous pressure of a rudder handle on the hypogastrium, in which similar treatment proved entirely successful.

Again, a class of case that is usually very difficult to treat—viz., that of gonorrhœal orchitis—seems to have proved fairly tractable when managed with the help of chloroform. Here one of the first signs of improvement was frequently the reëstablishment of an old discharge, which was soon cured simultaneously with the epididymitis.—*Lancet*, July 13, 1889.

An Expectorant Potion.—The *Union Médicale* of July 11th, recommends the following:

℞.—Powdered ipecac . . . . grs. v.
Oxymel of squill . . . . fʒvss.
Syrup of ipecac . . . . fʒj.
Infusion of senega . . . fʒiijss.—M.

Make potion.

Sig.—Give in teaspoonful doses. It will facilitate the expectoration of mucus and relieve bronchial inflammation.

New Therapeutic Properties of Antifebrin.—We read in the *Centralbl f. d. gesam. Therapie* for July that DR. ERNST JENDRÁSSIK has discovered additional and most important therapeutic properties in antifebrin.

In those typical attacks of excitement, and even violence, which occur in tabes and dementia paralytica, eight-grain doses of antifebrin acted as a rapid calmative,

the excited condition of the patients quickly giving place to a state of repose under its influence. The paralytic attacks were also greatly shortened by its use.

Jendrássik also used similar doses of the drug with great success, in combating the laryngeal spasms of tabetics. These spasms, which usually occur near bedtime, cause the patient profound distress and frequently necessitate him to leave his bed and pass an almost sleepless night. In every case, however, where, as soon as the symptoms of the oncoming attack manifested themselves, antifebrin was given, the spasms were almost invariably aborted.

A Diagnostic Sign of Early Pregnancy.—At a recent meeting of the Medical Soeiety of Giessen, Dr. Löhlein read a paper on the subject of the early diagnosis of pregnancy, and, after discussing the various diagnostic signs now known, mentioned a new one, by which it is possible to diagnosticate pregnancy during the second or third month. At this time there is a characteristic softness, compressibility, and elasticity of that part of the corpus uteri nearest the cervix. This may be felt by bimanual examination, one finger being introduced into the rectum and one hand pressing the abdomen.—*Deutsche med. Wochenschrift*, June 20, 1889.

The Administration of Chloroform by Gas-light.—As is well known, says the *Lancet* of July 27, 1889, it has been the practice to avoid the use of ether for anæsthetic work if artificial light is needed, whenever there is fear lest the ether vapor mixed with air be heated sufficiently to explode. The heavier vapor of chloroform, in addition to not being liable to form an explosive mixture with common air, is far less inflammable, and so has been hitherto regarded as a safe anæsthetic in such cases, at least as far as dangers from fire are concerned. Recent researches undertaken by Dr. Iterson, however, seem to show that chloroform vapor, when allowed to mix with the products of combustion of ordinary coal gas, undergoes decomposition and liberates gases of a most irritating nature. Dr. Iterson believes death has been brought about in one case at least by inhaling the noxious vapors, and recounts other instances in which alarming symptoms have supervened. One patient, although apparently but little affected while inhaling the chloroform, became painfully dyspnœic afterward, gasping and evincing the usual symptoms of asphyxia due to irritant vapors. These alarming effects passed off when the windows were thrown open and the fumes of coal-gas combustion and chloroform were permitted to escape.

It is well known that samples of chloroform which have been kept exposed to diffused light will after a while become contaminated with chlorine and acid substances, which possess most irritating properties; but until Dr. Iterson's warning arrived, we were not aware that chloroform vapor would, when diffused in the air of a room or operating theatre, be decomposed in passing over a jet of ignited coal gas. We know that, heated to redness, chloroform splits up into hydrochloric acid, chlorine, and other products, including the trichloride of carbon; and both Soubeiran and Liebig have pointed out that, although chloroform vapor cannot be ignited in the air, it will, if passed over a spirit-lamp flame, burn, and liberate irritating vapors. The question as to the gases most probably formed, if the coal gas is capable of uniting with the products of chloroform decomposition, is too wide a one for us to enter upon; nor do we think that we need go farther than to say that, if Dr. Iterson's facts are to be taken without reservation, the irritant bodies which exercised so deleterious an influence were, in all likelihood, the products of the ordinary decomposition of chloroform—namely, free chlorine, hydrochloric acid, and possibly other chlorides and ammoniacal compounds.

The Treatment of Tooth Rash.—Dr. E. Besnier, says the *Gazette Méd. de Nantes* of July 9th, considers that the rash appearing on the hands, wrists, and back of infants during teething to be caused reflexly by facial rash, the latter being induced by the copious flow of saliva from the mouth due to the irritation of the gums.

In treating this rash, therefore, he recognizes the following indications: first, to ease the irritation of the gums; second, to relieve insomnia; third, to relieve the rash itself.

1. To ease the irritation of the gums, he advises that they should be frequently and gently rubbed with the finger, which has been dipped into the following mixture:

℞.—Hydrochlorate of cocaine . gr. ¼.
Bromide of potassium . . grs. viij.
Distilled water } . . āā f ʒ iij .—M.
Glycerine }

2. To relieve the insomnia, a tablespoonful of the following formula may be given every hour:

℞.—Bromide of sodium . . grs. v to viij.
Syrup of orange flowers . f ʒ ij.—M.

3. For the treatment of the rash, the following salve should be constantly applied:

℞.—Oxide of zinc . . . ʒ iij.
Vaseline . . . . ʒ j.—M.

Strangulated Ovarian Hernia in an Infant.—The following interesting case is reported by Mr. Bilton Pollard, F.R.C.S., in the *Lancet* of July 27, 1889:

E. R., a female child aged three months, was admitted into the Northeastern Hospital for Children, on March 30, 1889.

When the child was two months old, its mother noticed a lump in its groin; the lump used to disappear for a time and then return; its size was variable. An inguinal truss was ordered at the hospital and applied; the hernia was then supposed to have been reduced. On the 27th the truss was removed, and an irreducible swelling was noticed in the right groin. On the 29th the patient was seen at the hospital by the house surgeon, who found the hernia irreducible. When admitted, there was a swelling of a rather larger size than a pigeon's egg situated over the right external abdominal ring, and distending the upper part of the right labium majus; the skin over it was red and hot; the swelling felt elastic, and indistinct fluctuation could be made out; it was irreducible, gave a dull note on percussion, and altogether simulated an abscess. Soon after admission the child was placed under the influence of chloroform, and an incision one inch and a half long was made through the superficial tissues, which were all œdematous and matted together. The sac contained an ovary and the fimbriated

extremity of the Fallopian tube; they were both greatly swollen, black or gray in color, and in places coated with lymph. The sac and its contents were mopped over with a 1 in 500 solution of perchloride of mercury, the pedicle was drawn down, transfixed, and tied in two pieces with silk ligatures, and the pedicle was returned within the abdomen. The neck of the sac was tied with a silk ligature, and the body of the sac was excised. The wound was made as dry as possible, and the skin brought together with silk sutures. No provision was made for drainage. A dressing of boracic acid powder and salalembroth gauze and wool was applied. The temperature reached 101.2° F. on the day after the operation; it had fallen to 98.6° by the following day; on the fifth day after the operation the temperature rose to 101.8° without any obvious cause; with these exceptions the temperature kept about normal. The dressing was changed daily. The wound healed by first intention. The stitches were removed on the seventh day, and the child was discharged on the eighteenth day after the operation.

Lanolin in the Treatment of Urethritis.—On account of lanolin having the property of adhering to the mucous membrane, DR. STERN, in the *Wiener klin. Wochenschr.* of July 4th, concluded to use it mixed with oil as a base for urethral injections in gonorrhœa and urethritis. His experiments were crowned with great success. The injections should be retained in the urethra for five or ten minutes. Antiseptic or astringent remedies should be added. Stern uses either of the following formulæ:

I.

℞.—Sulphate of zinc . . . grs. viij.
Water . . . . . f. ʒj.
Lanolin anhydrate . . . ʒv.
Oil of almonds . . . . f. ʒijss.—M.

II.

℞.—Salicylic acid . . . . grs. jv.
Oil of almonds . . . . f. ʒijss.
Lanolin anhydrate . . . ʒvjss.—M.

Stern found it necessary to continue these injections for only ten days at the longest; after which he advises the use of injections of a one and one-half per cent. solution of resorcin.

Antipyrin in Enuresis.—The *Prager med. Wochenschr.* of July 3d says that DRS. PERRET and DEVIC have used antipyrin with great success in the treatment of enuresis. Two doses of ten or fifteen grains, given one at six and one at eight o'clock in the evening, had the desired effect. The continuance of the treatment was only necessary for a few days.

Peru Balsam as a Germicide.—The recent and remarkable results obtained by LANDERER with balsam of Peru in the treatment of tuberculosis, have led DRS. BRANTIGAM and NOWAK to make a careful test of the germicidal properties of the drug. Their results are as follows:

(1) Pure balsam of Peru will kill microörganisms inside of twenty-four hours.

(2) Emulsions of the drug, up to a strength of twenty per cent., exerted no specific effect either upon the development or growth of bacteria upon which they were tested (cholera, anthrax, green pus, and subtilis).

(3) The beneficial actions of the drug are probably due to its influence upon ptomaines. — *Wiener med. Presse*, July 7, 1889.

Guafine, a New Antipyretic.—DR. L. BERTRAND has recently reported in the *Bolletino Farmaceutico* for July, 1889, the results of his experiments with guafine:

Guafine is a resin, which Bertrand succeeded in extracting from the leaves of the *psidium pyriferum*, a tree belonging to the myrtaceæ, and indigenous to the East Indies and South America. The leaves contain a considerable quantity of tannin and oxalate of lime and only two per cent. of the resin guafine. The results of numerous experiments proved that guafine was of considerable value in intermittent fevers. An infusion of the leaves or bark of the psidium is said to be a digestive.

Medical Treatment of the Intestines.—In concluding an article on the subject of intestinal obstruction (London *Medical Press* of July 24th), PROF. H. NOTHNAGEL says:

"I may briefly state in one sentence all the treatment I can recommend as an hospital consultant: Absolute abstinence from food; induce the peristaltic action from below; still it from above; and, above all, avoid purgative medicines. Further I know of nothing to add for the guidance of others.

"As regards other methods of treatment, very little can be said, but there are one or two forms of recent origin which I cannot pass without a remark. Washing out the stomach was introduced by Kussmaul as a remedy, but past experience of this form of treatment has nothing particular to commend itself, and has been of very little use. One advantage in using it is that it is a harmless application, and there is not any danger attending its use. The clyster I can always recommend as a most effectual remedy in all forms of fecal accumulations, but it is not suitable for fecal vomiting where there are inflammatory conditions. The object of a large clyster is to break up large fecal masses, but this is to be avoided where there is a tender bowel. Electricity is another remedy which has come into recent favor, and is not without merit. When using this agent it is recommended that both poles be placed over the tender or painful part of the bowel, or one pole introduced into the bowel. The successful cases from this treatment are so few that no opinion can be vouchsafed. There are other drugs, like belladonna, nicotine, and others that might be named, but there is one regularly prescribed drug that might be noticed. There was a time when every case of stoppage of the bowel must be drugged with mercury, but the greater number of the observers of this treatment have spoken very adversely of it. No doubt an individual case has arisen where success may be attributed to the drug, but these are very few, and leave us in grave doubt when it should be used at all. If the tradition of this drug tempts you to its use in any form of vomiting, I beg to consign it to your charge with care, and trust that you will carefully use your own judgment in applying the drug where the least danger exists. In concluding my observations on the medical treatment of the bowel, I feel it my duty to say that the most severe cases that we meet in our daily practice are frequently beyond the reach of our medicines, when arising from locking of the bowel, and properly belong to the region of operative surgery for their relief."

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, AUGUST 17, 1889.

RECENT ADVANCES IN ORTHOPÆDIC SURGERY.

IN surgery, as in the allied sciences, a gradual growth with occasional marked advances, counterbalanced by serious errors, has brought us to the present standpoint. But in no department has superstition, ignorance, and charlatanism retarded the progress to such a degree as in the special department of orthopædic surgery. Its advance has been marked by periods of activity followed by intervals of repose.

As in the history of amputations, in which perfection has been marked by three great achievements—the discovery of the tourniquet, ligature, and the antiseptic method—so progress in the treatment of club-foot has had its perfection hastened by important discoveries.

Hippocrates described these deformities, and Polybius handed down the record, but a long interval succeeded, and even in the time of Celsus, when every other subject was considered, this is not even mentioned, so that it was not until the middle of the seventeenth century that it again claimed attention, and the second impetus was given to the subject by Ambrose Paré. Following him came Severinus, Fabricius, Andry, and Du Verney, but nothing important was added to the subject until 1784, when Thilenius, a physician of Frankfort, successfully performed an open section of the tendo Achillis, and Venal, called by some the "father of orthopædic surgery," founded an institution in Orbe, Switzerland, and together they inaugurated a revival in orthopædy.

The impetus given by these masters was continued by such men as Stromeyer, Delpech, Rudolphi, Petit, Velpeau, Dieffenbach, Bonnet, and Guérin, but it was not until the full recognition of the grand possibilities of antiseptic surgery emboldened men to undertake procedures that before seemed impossible, not until the appearance of the osteoclast, the osteotome, the wrench, etc., and the performance of osteoclasis, osteotomies, redressement forcé, excisions, resections, etc., brought us into the midst of a new era—an era as decided as those of 1641 and 1784, and, we believe, equally, if not more, important. If we doubt this, we have but to look about us to witness the immense strides that orthopædic surgery has taken within the past fifteen years, and it was the advent of the antiseptic era that rendered them possible.

These advances are all in the direction of positive methods and certain results. In the operations for club-foot the resisting structures are unfolded and the foot retained in a corrected position until there is no tendency to relapse. This is accomplished by stretching, tearing, or dividing the contracted tissues. Thus, the methods of to-day may be divided into mechanical and operative.

The best instrument with which to apply force is undoubtedly the hand, and it has been shown recently (*Trans. Amer. Orthop. Assoc.*) that the force that can be safely applied is only a little short of that which would cause destruction of the soft parts. But this is often inadequate, and screw power is brought to bear through the mechanical devices of Morton and Bradford, or the wrenches of Thomas and Gibney. With these a powerful crushing force can be applied, which, with stretching and tearing, brings the foot into a corrected or over-corrected position.

Of the numerous operative procedures presented for severe and inveterate cases, the most important are combinations of tenotomy with subcutaneous or open incision, and osteotomies. Subcutaneous incision of all the soft parts on the inner side of the foot has the advantage of leaving the skin intact, but, combined with the danger of cutting the internal plantar artery and nerve, there is also an element of uncertainty in the tissues divided that does not occur in the open incision.

Strict antisepsis then has substituted for the subcutaneous operation the percutaneous method or open

incision of Phelphs and Hingston by which all the tissues which prevent perfect redressement—the skin, fascia, tendons, ligaments, etc., can be incised, and the wound be allowed to heal. That the operation is gaining ground one must infer from the increasing number of cases thus treated abroad, and the favorable terms in which it is spoken of by Schreiber, Rupprecht, and others. As performed by Nönchen, Cordua, Ph. Schede, Lauenstein, Albert, Billroth, and others, it is essentially the operation of Phelphs, and O. v. Büngner, in a recent contribution to the *Centralb. f. Chirurgie*, "Upon the Treatment of Congenital Club-foot in the Clinic of Prof. Volkmann, at Halle," reports twenty-one operations in fourteen cases, treated since 1884, ranging from four months to fifteen years, and commends the operation, all the cases healing without reaction and presenting beautiful results.

The division of the internal lateral ligament, as pointed out by Parker, is an important addition in certain cases, and deserves more general recognition than it has generally received.

The immunity from bad results under the protection of antiseptic covering has even led many beyond the bounds of propriety, and some dozen or more operative procedures upon the osseous structures of the foot have been advocated—the astragalus, talus, scaphoid, cuboid, the cuneiform bones, and the apex of the external malleolus have all been removed, and we cannot help thinking with Reeves, that these are the days of *les folies chirurgicales*, or as Erichsen has termed them, of *surgical audacities*.

There is, however, one operation which is likely to retain its position among accepted procedures for the relief of inveterate cases—astragaloid osteotomy. As described recently by BRADFORD in a paper before the American Orthopædic Association, the procedure is not difficult, and "the result is similar to that in Macewen's operation for knock-knee." An incision through the skin is made clear to the bone from the tip of the internal malleolus to the inner side of the first metatarsal, and the foot straightened as the metacarpal bone is separated from the malleolus. The scaphoid will be seen before the astragalus is encountered, if the deformity is great, and it will be first within reach of the knife in all cases. If the foot is still further stretched, the scaphoid begins to uncover the side of the astragalus, and the neck of the astragalus is seen; a small osteotome is placed upon the neck of the astragalus, to the distal side of the scaphoid articulation, and as in the Macewen operation, the neck of the astragalus is nearly or fully divided. The foot is then forcibly straightened, and the unchiselled portion of the neck of the astragalus is fractured.

With these means—forcible manual and mechanical restoration, tenotomy, subcutaneous or open incision, and astragaloid osteotomy—there is a certainty of curing club-foot never before obtained, and, as Bradford remarks, "In no branch of surgery can a cure be more confidently promised than in the treatment of club-foot."

Truly, we are to-day in the midst of a new era in orthopædic surgery, and the names of Macewen, Ollier, Gibney, Willard, Parker, Phelphs, Lorenz, and others, will characterize a period of surgical activity equal to any the world has known.

THE GROWTH OF THE BRITISH MEDICAL ASSOCIATION.

THE annual report of the Council of the British Medical Association presented at the Leeds meeting this week gives some interesting data concerning the growth of the Association. It calls attention to the fact that when the Association for the first time met at Leeds, in 1843, its membership was a little over 1600; twenty-six years later, when it met again in the same city, it had increased only about 2400; and now on its third visit to Leeds, after the lapse of twenty years, its membership has further increased by 8802 to a total of 12,897.

The marvellously rapid rate of growth in recent years of the membership of the Association is the direct result of, and has followed closely upon the advancement of the *British Medical Journal* to the position of the leading medical periodical of Great Britain, through the able editorial management of Mr. Ernest Hart and the active coöperation of a very large staff, such as only a great centre of medical activity like London can furnish. As soon as the *Journal* attained this position medical men all over the kingdom hastened to become in receipt of it by joining the Association. Thus the *Journal* has built up the Association to a large membership and to a position of widespread influence and power, and it has an additional circulation, outside of the Association, of between two and three thousand. Its present total circulation of over 15,500 copies is probably not exceeded by any medical journal in the world.

During the year the Association has expended fifteen hundred dollars on its library and two thou-

sand dollars in grants in aid of original scientific research. Its financial exhibit shows a net profit for the past year of over twenty thousand dollars. Altogether the Association presents a degree of prosperity, and is doing an amount of good work which is extremely creditable alike to its management and to the British profession.

The United States Hay Fever Association will hold its Sixteenth Annual Meeting on the 27th of August, at Bethlehem, N. H.

Dr. Kinyoun, of the Marine-Hospital Service, and some others engaged in physiological inquiry, requested the Mayor of New York City to allow some of the condemned dogs at the pound to be transferred to them for scientific purposes. The Mayor has duly considered the petition, and has also heard what the anti-vivisectionists have to say; he has rendered his decision, which is a refusal to give the dogs over to them in a living state. After the dogs have been drowned the students can have all they want: "hundreds of them for anatomy, but not one for physiology," is the Mayor's doctrine.

A fatal case of actinomycosis hominis has recently occurred in New York City. The case was that of a young man, who was well up to February last, but in April became very ill, with symptoms referable to the liver. At the autopsy the liver was found to weigh nine and a half pounds, and the size of the fungoid growth upon and within the liver exceeded that of the organ itself. His attending physician have, as yet, been unable to determine, to their satisfaction, how the disease in this case was contracted; they suspect that the fungus was swallowed with food or drink, and, taking root low down in the œsophagus, spread thence along the diaphragm to the abdominal wall and liver. The liver is rarely the seat of actinomycosis; in fact, the disease is not often found in any of the organs below the diaphragm, but when it is so found it is in most cases located in the intestine.

Dr. Alexander B. Mott, Professor of Clinical and Operative Surgery in Bellevue Hospital Medical College, died of pneumonia after a very brief illness at his country residence at Yonkers last Monday.

Dr. Mott was the fourth son of the late Valentine Mott, and was born in New York on March 21, 1826. He was graduated in medicine in 1850, and subsequently served as Visiting Surgeon to St. Vincent's and Charity Hospitals. At the outbreak of the war he accompanied the first regiments to Washington and organized their medical corps and served throughout the war, and was present at Appomatox Court House at the signing by Generals Grant and Lee of the articles of agreement to surrender. He was one of the original members of the faculty of Bellevue Hospital Medical College. He leaves one son, Dr. Valentine Mott.

Dr. James L. Cabell, Professor of Anatomy and Surgery in the University of Virginia, died at Overton, Va., on Tuesday, aged seventy-six. He was graduated in medicine at the University of Maryland, in 1834. During the war he had charge of the Confederate military hospital in Charlottesville. He was Chairman of the National Sanitary Conference at Washington during the yellow fever epidemic at Memphis, and subsequently was President of the National Board of Health. He was an accomplished physician, and a scholarly and courteous gentleman.

Job Kenyon, M.D., died of apoplexy, at Providence, R. I., on the 5th inst., at the age of sixty-eight years. He was born in Exeter, R. I. He was graduated in medicine at the Yale Medical School, in 1846. In 1862 he became Assistant Surgeon to the Third Rhode Island Artillery, then stationed at Hilton Head, S. C., but was compelled, on account of ill-health, to resign after a few months' service. From 1865 to 1869 he was Physician to the United States Marine Hospital, then located in Providence. In 1871 he was appointed by Gov. Padelford a member of the Board of State Charities and Corrections, in which office he continued until his resignation in 1884, rendering the State intelligent and efficient service. He represented the towns of Coventry and Warwick at different times in the State Senate. He became a Fellow of the Rhode Island Medical Society in 1854 and was its president for two years (1883–84).

Dr. Kenyon was a man of acute perception, excellent judgment, and untiring industry. His counsel was widely sought in consultation, both by physician and patient. He passed away while actually practising his profession, as he was attacked while in his office and fell to the floor unconscious just after he had dismissed a patient.

REVIEWS.

A SYSTEM OF OBSTETRICS, BY AMERICAN AUTHORS. Edited by BARTON COOKE HIRST, M.D., Associate Professor of Obstetrics in the University of Pennsylvania, etc. Vol. II. 8vo., pp. 554. Philadelphia: Lea Brothers & Co., 1889.

The second and completing volume of the American System of Obstetrics justifies amply the expectation aroused by the foregoing volume, and furnishes a most satisfactory exposition of modern obstetric science.

The "Diseases and Accidents of Labor" are discussed by Parvin in his comprehensive and facile manner. His treatment of hemorrhage and eclampsia—two subjects of great importance—is especially full and practical. Davis writes on the "Forceps and Embryotomy" clearly and concisely. The most recent views upon the use of instruments during labor are presented, with cuts of the instruments employed. The arguments in the choice of embryotomy and Cæsarean section are impartially given and embrace the latest statistics of various operators. "Premature Induction of Labor and Version" receive full exposition by Cameron, of Montreal. His illustrations are especially good, and his descriptions embrace the procedures most often adopted in foreign maternities.

The topic "Cæsarean Operation, Symphysiotomy, Laparo-elytrotomy, and Laparo-cystectomy," at once suggested Harris as the author most fit to treat it, and the volume is enriched by an accurate and scholarly article from his pen which fully covers all known to the date of writing on these subjects. It is interesting to note that a practical consensus of opinion as to the indications for and relative place of the modern Cæsarean operation exists between the writers of the different articles in this volume which touch upon these points; the extended discussions on this subject, which have gone on for the last few years, have cleared up much that was undecided, and formed an opinion which may guide the practitioner in difficult cases.

Garrigues very sensibly styles his article "Puerperal Infection," and gives a clear and exceedingly practical exposition of the subject. It would be well if Garrigues' plea for his title were allowed and the misleading term "puerperal fever," banished from obstetric nomenclature. His well-known method of antiseptic treatment is fully described and illustrated. The much-vexed topic "The Etiology of Puerperal Fever," receives thoroughly scientific treatment at the hands of Ernst. His conclusions are of such clinical interest that we give them: Puerperal fever is not a specific process, but only one form of an infectious wound disease, always exogenous in origin. It is produced in all cases by living ferments, either by destruction of tissue or mechanical obstruction, or indirectly by production of leucomaines.

Hirst contributes a useful study of "Some Complications of the Puerperal State Independent of Septic Infection," which embraces many conditions frequently met by the practitioner and of great practical interest. The article is illustrated by characteristic temperature curves.

The selection of a neurologist to write upon "Insanity and Diseases of the Nervous System in the Childbearing Woman" is more than justified by Lloyd's interesting article on this subject. "The Newborn Infant" receives very comprehensive medical and surgical attention by J. Lewis Smith and Stephen Smith, of New York, these articles being among the most valuable in the volume. The volume is closed by De Schweinitz, who contributes an interesting account, with illustrations, of the "Congenital Anomalies of the Eye."

SOCIETY PROCEEDINGS.

THIRD CONGRESS OF THE GERMAN SOCIETY OF GYNECOLOGY.

Held at Freiburg, June 12, 13, and 14, 1889.

(Specially reported for THE MEDICAL NEWS.)

(Continued from page 161.)

TWO CASES OF RUPTURE OF THE UTERUS.

DR. KEHRER, of Heidelberg, presented anatomical specimens of a very rare case of uterine rupture which took place in the posterior wall of the uterus. The walls in this region are very thin; this uterus also is divided by a band which reaches down to about the level of the inferior segment of the organ. This case had a contracted pelvis and version was attempted; but on account of this band, a false direction was taken which resulted in rupture of the uterus. He performed Porro's operation and then tamponed the abdominal cavity with iodoform gauze, and the patient was cured without febrile reaction.

DR. WIEDOW, of Freiburg, presented a case in which he had performed Porro's operation; he had to deal with a case of spontaneous uterine rupture in a contracted pelvis; the fœtal sac had penetrated into the abdominal cavity. The patient was cured without accidents.

PLASTIC RESECTION OF THE SACRUM.

DR. WIEDOW presented two cases in which he had done excision of the sacrum. He made a V-shaped incision, the rectum was detached and the sacrum excised with the chain saw up to the periosteum; in this manner he obtained a very extensive operative field. In the first case he had to deal with a carcinoma of the neck of the uterus, in the second with a pyosalpingitis.

DR. HEGAR said that this method allows the surgeon to see exactly what he does; one can see the uterine and utero-ovarian arteries beat under his eyes, and they can be easily ligated, while by extirpation of the uterus *per vaginam* one works entirely in the dark.

ON PERINEORRHAPHY.

DR. SONNTAG, of Freiburg, presented ten women who had been operated on by the methods of Hegar, Freund, Simpson, Tait, Sänger, and Martin. It is not of great importance that the preference should be given to the method of Freund or to that of Hegar; but he thought, however, that in complete rupture of the perineum the method of Freund has the advantage of preserving the posterior column of the vagina, and so consolidating the perineum. In cases of incomplete rupture all methods give good results. In prolapse of the vagina there is an advantage in employing Hegar's method. Out of 256 patients operated upon by Hegar's method in the past seven years, he only had one failure, and in this case an abscess formed in the anterior portion of the wound. Out of six patients who were operated upon by Freund's method, four of them being complete ruptures, one a prolapse, and the other an incomplete rupture; only one

case did not unite by first intention. Simpson's procedure has given him good results in prolapsus; it is not more nor less rapid than Hegar's method, but it is excellent to produce a very strong recto-vaginal wall. Out of eleven cases of complete prolapse he had excellent results in ten cases, and in one case secondary union. In tha cases operated on by Tait's method he had obtained less satisfactory results. He thought that in prolapses, elytrorrhaphy followed by perineorrhaphy is not so reliable as colpoperineorrhaphy.

Dr. Sänger, of Leipzig, had used the method of perineorrhaphy by flap in seventy-one cases of perineal rupture. In twenty-five cases perineorrhaphy was preceded by anterior elytrorrhaphy, in two cases by elytrorrhaphy, and in twenty cases both these operations were employed. In all cases he obtained, nearly without exception, a reunion by first intention.

For sutures he employed, in all cases but two, silver, the extremities of which were united by a shot. This process will repair all perineal or vaginal ruptures, but its real advantage is seen in perineal ruptures with complete tear of the sphincter ani. The advantage of perineorrhaphy by flap is to preserve cicatricial tissues and to utilize them for strengthening the perineum. The rapidity of the cure by this process is due to the fact that the skin of the perineum is brought into apposition with the labia majoris, and we know that the union of skin is much more rapid than the union of mucous membrane.

Dr. Küstner, of Dorpat, said that tears are usually produced on one side only, and in that case he did not see the advantage of the method by flap; he thought that we ought to choose the method most appropriate to the case which presents and try to restore the parts as near as possible to their natural condition. By Hegar's method, with time, there is produced a depression in the level of the perineal sutures, which is the result of the forced coming together of the lateral parts of the perineum.

Dr. Hegar said that by complete rupture of the perineum, he meant a rupture with a complete tear of the recto-vaginal wall. Sänger has a very large series of complete ruptures of the perineum. He wondered whether he, by complete rupture, meant the same. The method by flaps cannot restore the natural parts; he unites flaps which were not formerly in relation to each other, and this great displacement in a perpendicular direction determines a great tension of the perineum. By the other methods patients will rise after twelve days. Kustner says that by the speaker's method a depression on the perineum is left near the vagina; he found that this depression does not really exist. If one is not careful it can be produced by the vaginal touch; but if one practises at the same time the rectal and vaginal touch, he finds that the depression does not exist.

ON EXTRA-UTERINE PREGNANCY.

Dr. Veit, of Berlin, said that, from an operative point of view, we must divide extra-uterine pregnancies into the pedicellated and non-pedicellated forms; those in which we can completely extirpate the sac, and those in which we cannot. During the first months extra-uterine pregnancy is easy of operation. Extra-uterine ovarian gestation is liable to the same operations as other ovarian tumors; in extra-uterine pregnancy of the tube, rupture of the sac is to be feared; this rupture can be unilateral, and can take place between the layers of the broad ligaments; in such a case there is no danger during the first five months of gestation. For the operation for extra-uterine pregnancy in the first months, the operative procedure consists in ligating the two extremities of the Fallopian tube and the broad ligaments, and then excise; in the majority of cases the diagnosis can be made, but not very absolutely; the careful examination of the uterine mucous membrane to see whether or no there exists a decidua is very important. The symptoms of rupture of the sac are those of labor, hemorrhages which can produce themselves during the life or after the death of the embryo; the pains are not always constant. By the touch, one feels on one side of the uterus a tumor which is easily recognized to belong to the tube, of soft consistency, without fluctuation or tension. There might, however, be some tension in the sac, with a hard feeling when there is a clot. The decidua can detach itself in the third month and give rise to hemorrhages without the embryo suffering from them.

As for the treatment, we have electrolysis, morphine, or an operation. He did not attach great importance to electrolysis; it gives pain, and may be the cause of rupture of the sac. Morphine is an excellent palliative treatment which brings on absorption of the ovum, but notwithstanding the results obtained by injections of morphia into the fœtal sac, he preferred laparotomy.

Tait has had two cases of death out of forty-three cases of extra-uterine pregnancy; in those two cases he had to deal with a case of rupture of the fœtal sac. The speaker had operated on fifteen extra-uterine pregnancies, twelve without rupture of the sac, three with rupture of the sac. Injections of morphine in the beginning of extra-uterine pregnancy is dangerous, for the ovum can rupture at the moment of the injection, and out of his three cases of rupture of the sac he had saved only one patient; in those cases of rupture one feels nothing in the abdomen; and, on the other hand, it is a dangerous proceeding to compress the little tumor, as we are liable to break it.

Dr. Werth, of Kiel, said that the passage of the ovum between the layers of the broad ligaments can take place without producing a solution of continuity in the tissues. He had observed a case in which the fœtal sac had passed through the broad ligaments without there being rupture or hemorrhage. Schuchardt had published a case in which the placenta penetrated through the connective tissue of the broad ligaments and determined a bloody infiltration under which the fœtal sac was buried. Olshausen had found such a case, which he operated upon six days after the rupture of the sac and obtained a living child.

In the last few years he had had to treat nine cases of extra-uterine gestation, with a mortality of 22 per cent.; the non-pedicellated extra-uterine pregnancies are very difficult to remove entirely, yet one cannot leave in place the embryonal sac in a state of putrefaction.

When it is necessary to operate, which is the best method to be used, laparotomy or the vaginal method? Hermann prefers elytrotomy; when there is pus or putrefaction he removes the placenta of the fœtal sac. In a case of intra-ligamentous pregnancy, Breisky succeeded in extirpating the fœtal sac, and he obtained a living fœtus; it is well to remove the placenta at the same time as the fœtus. One must not try to obtain a living child, but rather think of the dangers to which the mother is

subjected. He considered dilatation of the uterus as a radical method to destroy the fœtus.

DR. OLSHAUSEN, of Berlin, had operated lately on five cases of extra-uterine pregnancy, two in which the normal term of gestation had passed, and three in the last month of pregnancy. He obtained two living children and one dead. Twice he succeeded in removing the placenta, and once he made drainage; twenty-eight days after the operation the placenta became detached; in this last case, the child was free in the abdominal cavity and the woman had had pains. He, at first, could not find the membranes; finally, he found them with the placenta in Douglas's cul-de-sac, and he ligated them all together. He thought that in cases of extra-uterine pregnancy one always finds a decidua, which he must not mistake for a menstrual decidua, which is only composed of fibrin. He had seen a woman who for years would lose at each menstrual period such a membrana decidua.

UTERINE RETROFIXATION.

DR. FREUND, of Strasburg, said that in grave cases of prolapse of the uterus and vagina, complicated with hernia of the intestine, no special operation had been proposed up to date. On the other hand, the methods employed, such as colporrhaphy, perineorrhaphy, extirpation of the uterus, ventrofixation of the uterus, etc., have all proven to be insufficient. In one case of this kind, after having made a large opening in Douglas's cul-de-sac, he sutured the posterior part of the uterus to the peritoneum situated above the promontory, in the neighborhood of the utero-sacral ligaments. He made his sutures below the utero-sacral ligaments, so as not to involve the rectum. He uses this method in deep retroflexions with a large cavity of Douglas. This operation is a rational one, and has its place beside ventrofixation.

ON THE MECHANISM OF ROTATION IN RIGHT OCCIPITO-POSTERIOR POSITIONS.

DR. FROMMEL, of Erlangen, said that he had been trying to find out whether rotation of the head preceded that of the trunk, and by giving chloroform he had observed that occasionally the head turns first, and finds itself in front, when the trunk is still behind.

DR. SCHATZ, of Rostock, thought formerly that rotation of the trunk preceded that of the head, but he now thought that the head always turns forward first.

DR. HOFMEIER, of Würzburg, saw at the Berliner lying-in clinic, a woman who during labor kept the sitting posture; in this case he observed that the trunk first turned forward.

DR. OLSHAUSEN, of Berlin, still believed that rotation of the trunk precedes that of the head.

DR. SCHWARZ thought that there are cases in which rotation of the trunk brings about that of the head.

ON SUTURE IN CÆSAREAN SECTION.

DR. VEIT, of Berlin, lately had performed Cæsarean section on a female monkey in the last stages of pregnancy. He sutured the uterus by separate sutures; at the end of five days he examined the uterine wound and found that the peritoneum had united.

As to the favorable moment to perform the Cæsarean operation, is it to be made when the woman has no pains? He had lately operated upon a woman without her having any pains, and he had not met with atony of the uterus.

DR. BAR, of Paris, had operated in similar conditions, with the same success. Cases have been published where the uterine incision had been made without there being any pains, and in which great hemorrhages occurred from atony of the organ. He thought that the operation ought not to be undertaken before the pains are clearly present.

DR. SÄNGER, of Leipzig, said that the uterine wall of the monkey is very thin and cannot be compared to that of the human uterus. He thought that we ought always to liberate the peritoneum on the borders of the uterine wound so as to bring the two layers in contact.

DR. LEOPOLD had had three cases of death after Cæsarean section, and he observed each time that the peritoneum had united, although he had not dissected this serous membrane.

As to the moment at which the operation is to be performed, he thought that we must never interfere without there being well-characterized pains. He had lately operated upon a woman, who had for six hours slight pains. This woman died from hemorrhage by uterine inertia, yet she had had a very powerful contraction when he removed the rubber band.

ON EXTIRPATION OF THE UTERUS BY ZUCKERKANDL'S METHOD.

DR. FROMMEL, of Erlangen, said that the extirpation of the uterus by the vaginal method is often very imperfect. For this reason Zuckerkandl, of Vienna, proposed to extirpate the uterus through the recto-vaginal septum. To do this, a curved incision starting from the ischium is made, going between the anus and coccyx, the rectum is then freed from its attachments and it is lifted upward; the rectum can be liberated with the fingers alone, no instrument being necessary. In this manner, a very large wound is obtained, through which one can introduce the fist into the peritoneal cavity; the arteries are easily ligated and the large wound allows a free access to the uterus and permits the removal at will of all carcinomatous tissues; the bladder is easily separated from the fundus of the uterus. He thought this operation was quite practicable and of great usefulness in difficult cases; it is also indicated in retro-uterine abscesses.

ON EXTIRPATION OF PELVIC TUMORS BY PERINEOTOMY.

DR. SÄNGER, of Leipzig, said that by the name perineotomy he meant the exposure of the ischio-rectal fossæ by the peritoneum for the removal of cysts, hematomas, exudates or other tumors having their seat in the connective tissue and Douglas's cul-de-sac. A year ago he did such an operation on a woman aged forty-two years, suffering from a retro-rectal and recto-vaginal dermoid cyst. This woman had been obliged in her last six labors to have the help of a physician on account of the great development of the tumor. He made an incision of three inches, starting from the middle of the part separating the right labia majora from the anus and extending beyond this orifice; he penetrated into the pelvis, where he found a cyst having the size of a child's head; this cyst was independent of the ovary. The patient was cured perfectly. Only ten cases of the kind has he been able to find in the literature of the subject.

(To be concluded)

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, June 3, 1889.

J. Ewing Mears, M.D., in the Chair.

Dr. F. H. Gross reported a case of

RUPTURE OF THE QUADRICEPS TENDON

above the patella of the left leg. The injury was received March 2d, and the case at once came to the hospital. There did not seem to be any opportunity for applying sutures. There is a fair degree of usefulness, mainly through the accessory tendons of the vasti muscles. It occurred to him that it might be advisable to transplant the lower attachment of these tendons to the region of the ligamentum patella.

Dr. Nancrede had seen two such cases. One was in private practice, and there was admirable functional result. In the second case, also, he presumes that the result was good. The first case was caused by the tongue of a heavy wagon striking the tendon and cutting it subcutaneously.

Dr. William Hunt desired to record an

ANOMALY OF THE CHEST ORGANS.

which he recently met with at the Pennsylvania Hospital. A young woman looking very miserable and phthisical was admitted with necrosis of the manubrium of the sternum with a sinus leading to the diseased bone. She was in such a weak condition that before operative procedure could be resorted to she died.

On opening the chest it was found that the right lung extended all the way across to the left side, and completely filled the upper and lateral parts of the left cavity. The mediastinum and its contents were pushed out of the way. The heart was held to the left wall of the thorax by adhesions of the pericardium. The left lung was practically gone. The remains of it were not as large as the fist, and there was no breathing tissue in it whatever. There was a vomica present at the apex of the right lung, but whether tubercular he could not say. He thought that in this case the most acute auscultator would have been deceived and would have naturally thought, when listening over the left chest, that he heard the murmurs of the left lung. It might be that one percussing across the front of the chest from right to left, and noticing the continued resonance, would have a suspicion of the condition present. He had never met with a similar case.

Dr. Nancrede called attention to an interesting case bearing on the

TREATMENT OF ACUTE INFECTIVE OSTEOMYELITIS.

It is not often that the surgeon has an opportunity to treat these cases in the early stages, for they are usually found in the medical wards under the head of rheumatism, typhoid fever, etc. We constantly meet with the results of such attacks when they have been partial and the patients have recovered. French surgeons are of the opinion that in the better classes with good surroundings, the disease is often recovered from, but we all know that in the average run of hospital cases among the lower classes, the disease is very often fatal. He could only recall a few cases in his twenty years connection with the Episcopal Hospital, in which the cases were seen by the surgeon in the earlier stages. One was not diagnosticated by the surgeon in charge, and the patient died.

Another case was that of a child sent in practically dying, who for a week or ten days had been treated outside for rheumatism. He made the freest possible incision and tried to treat it antiseptically. That was fourteen years ago. Since then several Russian surgeons, Mr. Keetley, and the French surgeons have called attention to the benefits of free opening of the bone and the removal of the medulla. He had been for some time watching for such a case.

A week ago his attention was called by his Resident to a boy in the Episcopal Hospital who was supposed to have erysipelas of the leg. He had been examined by a medical colleague, who thought it was a sprain. He had been treated outside for rheumatism. He found the temperature between 102° and 103°; the boy delirious, and evidently very ill. He examined the limb and recognized what he considered to be osteomyelitis. He examined it with an exploring needle and found the bone bare in all directions, and pus oozed up through the minute puncture in a steady stream for hours, showing the enormous pressure it was subjected to. Sixteen days before, the boy, who was seventeen years of age—in what has been called the epiphyseal age—had twisted his foot slightly in jumping from a wagon. The next day he complained of what was supposed to be rheumatic pain. On the third day he continued to work, but on the fourth he became ill enough to go to bed, and on the sixth he was brought to the hospital. He saw him on the seventh day. Three hours elapsed before he could gain permission to operate, and in that time the disease progressed upward at least two inches. He exposed the tibia, white and totally stripped of periostium from the lower epiphysis to within three inches of the upper, and trephined over the upper portion of the bared shaft with a large trephine, striking living medulla, although the external surface was white and apparently dead. He then trephined as close as possible to the lower epiphysis, when pus escaped as soon as his trephine pin pierced the compact layer. He trephined two inches above and cut away the intervening bone. He then removed the medulla, which was gray and looked as though it were sloughing in some places. He again trephined higher up and cut the bone between. He also cut away still further, opened a second abscess and cleaned out the medulla. After thoroughly removing the medulla he packed the cavity. The temperature dropped 4° in two hours. To-day it is normal, and the boy is sleeping well and feeling comfortable. He thought that the greater part of the bone would be saved. The boy's life is certainly saved.

He thought that the usual teaching of our surgical text-books is that in such cases the limb should be amputated, although some of them refer incidentally to the operation of trephining, and the removal of the medulla, and say that possibly that may answer. He believed that this will always answer if it is done effectually. He thought that no limb should be sacrificed until this is tried. It is so rare that the surgeon sees these cases at an early period, that he thought it worth while to report this case.

(To be concluded.)

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, June 20, 1889.

THE PRESIDENT, ALFRED L. LOOMIS, M.D., IN THE CHAIR.

DR. A. JACOBI read a paper entitled

NOTES ON THE BAKING OF BACILLI.

He said that of late the inhalation of dry hot air in pulmonary tuberculosis had received considerable attention. Having made some remarks strongly condemnatory of all patented apparatuses and processes in medicine, he said that the patented apparatus of Dr. Louis Weigert, who is said to have been graduated in New York, but is now a resident of Berlin, was not very perfect in its mechanical construction, and was at the same time very expensive.

The attention of the profession was first directed to the use of dry hot air in consumption by Dr. Louis Halter, in an article published in two numbers of the *Berliner klinische Wochenschrift*, in September, 1888, and accompanied by a drawing of an apparatus which he had devised. His attention was first drawn to the matter by the exemption of lime-kiln workers from phthisis, and his observations, extending over a period of fifteen years, were made in Westphalia, where this disease was very prevalent among the general population. The air about the ovens is quite dry and very hot, the temperature usually ranging from 122° to 158° Fahrenheit. Such air must, therefore, be for the most part free from tubercle bacilli, which, it has been established, die at a temperature of from 140° to 149° F. The air about the lime-kilns is also greatly rarefied, and it has the effect, in the case of new operatives, of increasing the body temperature two and a half degrees above the normal, while the pulse is raised from 120 to 160, and the respirations to 20 to 30 to the minute. Old hands, however, perspire very freely, and feel perfectly well.

Another paper on the inhalation of dry hot air in phthisis was also published in the *Berliner klinische Wochenschrift* in September, 1888, by Dr. E. Krull, and this was likewise accompanied by a representation of an apparatus devised by the author. It was not until December, 1888, that Dr. Louis Weigert published an account of his apparatus in the New York *Medical Record*, and in his communication he made no mention whatever of the articles by Drs. Halter and Krull. About the same time he also exploited his apparatus in the public press; proclaiming that consumption was entirely curable by his treatment, and that he was the equal of Koch by reason of his great invention.

Dr. Jacobi then went on to say that he had used the Weigert apparatus to a considerable extent in his wards at Bellevue Hospital, and that the results had not been at all satisfactory. It was true that in many of the cases more or less improvement was noted while it was being used; but it was a well-established fact that patients that came to the hospital with phthisis, except the disease was in the last stages, improved for a time after entrance, on account of the nutritious diet and the rest and freedom from worriment afforded them. He found by repeated observations that the temperature of the air to be inhaled from the apparatus was always many degrees lower by the time that it had passed through the tube conveying it to the mouth of the patient than it was when it left the cylinder in which it was heated. In addition, the temperature of the air was further reduced in the pharynx and trachea, and when the proportionately small amount remaining finally reached the great volume of the blood, and was diffused over the extended surface of the lungs, it was still more cooled down. The expired air was, in fact, warmer than the inspired air. When it was remembered, furthermore, that the bacilli were located and multiplied deep in the tissues, it seemed hardly probable that they were disturbed at all, it was not even likely that the soft lung tissue could be heated above normal, while neither the pulse nor the general temperature of the body showed any alteration. It was evident, therefore, that in order to destroy the bacilli, something more was required than the inhalation of hot air in an ordinary room. The temperature of the apartment in which the inhalation was given ought to be at least 105°. The temperature to which the men working at the lime-kilns mentioned by Halter were subjected, varied from 106° to 158°.

Both the hot inhalations and the hot room, however, find their contra-indications in all cases where the patients were weak or liable to hæmoptysis, and could only be employed with safety, therefore, where the patient was comparatively robust. Dr. Jacobi believed, consequently, that this method of treatment should be resorted to only in the very earliest stage of phthisis. In the cases in which he had used the hot inhalations, other causes, as he had mentioned, would account for the improvement noticed, where any improvement followed. In a few he found it difficult to control the cough excited by the treatment, and in two instances it caused so much vomiting, with other disagreeable symptoms, that the patients were decidedly better after stopping the inhalations.

Then followed a

PRESENTATION AND DESCRIPTION OF THE PLANS OF THE NEW ACADEMY BUILDING,

by Mr. R. H. Robertson, the architect. The lot on Forty-third Street, near Fifth Avenue, upon which it will stand, is seventy-five feet wide and one hundred feet deep, and it is designed to have the structure as complete as possible in every detail. It will be five stories in height and will also have a gable story, and the materials used in the front of the building will be brick and Long Meadow stone, both rock-faced and dressed. The kitchen and janitor's apartments will be in the basement. On the first floor are the committee-room, coat-room, and meeting-room (the latter 36 x 26 feet) in front, and in the rear a large assembly room, 57 x 42 feet, and a dining-room 31 x 26 feet. These two rooms are separated by a rolling partition, and they can be thrown into one at any time when required for large meetings or a largely attended dinner. One and a half stories are taken for this part of the house, and the rooms are twenty-six feet in height. On each side are air-shafts, and by means of a glass arch a flood of light is let in at the end of the rooms. The half-story in front of the building, which is eleven feet high, is to be used for committee-rooms, etc. The next story will contain the reference library and the stack-room, which occupy a story and a half. In the front there will also be three reading-rooms of less height. The full capacity of the stack-room will be for 230,000 volumes, to accommodate which there will be three tiers

of stacks. At first, however, but a single tier will be necessary. The next floor will be taken up by four section rooms, each with an ante-room and specimen or apparatus-room, and accommodating respectively 160, 125, 125, and 110 persons. On the top story, which will not extend over the whole of the building, will be a microscope-room and the librarian's apartments, and the rest of the space will be devoted to an open deck, which will probably be fitted up as a summer garden.

THE PRESIDENCY OF THE NEW YORK BOARD OF HEALTH.

DR. WALTER MENDELSON introduced the following resolutions:

Whereas, The Board of Health, being a department of the city government in which every member of the community is most personally and vitally interested, and being one where it is absolutely necessary for true efficiency that the presiding officer be acquainted with sanitary science and have a knowledge of the laws of health and of diseases; and,

Whereas, The medical profession, as guardian of the health of the members of the community, is being brought into almost daily contact with the workings of the Board of Health, and is therefore especially interested in its efficiency; and

Whereas, The Mayor of the City of New York has recently appointed to the Presidency of the Board of Health one whose previous experience no wise justifies the belief that he is at all fitted to assume the grave responsibilities of the office intrusted to him; therefore be it

Resolved, That in the opinion of the New York Academy of Medicine, the appointment of any one not specially qualified is fraught with possibilities of the gravest danger to the public health; and, furthermore, that the Academy of Medicine, having at heart the public good, urges the Mayor to reconsider the appointment made, and, after due consideration with those acquainted with the duties of the office, make a new appointment better suited to the important nature of the department.

On motion, the resolutions were referred to the Council of the Academy.

The Academy then adjourned until the first Thursday in October, and the exercises were concluded with a collation and social re-union.

CORRESPONDENCE.

A WINTER VACATION TO THE WINDWARD ISLANDS.

II.

OUR voyage down the Islands was the perfection of ocean travel. The "Barracouta" steamed by night and laid in port in the daytime, discharging at each place the packages of pork, flour, cheese, and various other things that sustain the life of man. The States feed the Islands, but that is all we do for them. They will have nothing else of us, as we bear a bad reputation among them. A planter told me that the freight on an 80-horse-power boiler was $500 from Glasgow. "Why did you not get it from the States at a less price and at half the freight charge?" I asked him. "Oh!" he said, with the air of a man who was stating a fact perfectly well known to me, "you do not make them so good or strong in the States." A merchant at Trinidad informed me that he formerly bought cotton goods and prints from us, but he was obliged to stop trading because we did not pack our goods securely, while the cases made in England were strong and did not break open and expose the contents. I am unable to conceive of any better proof that manufacturers who are nursed on high tariff become careless and bad workmen. We have one product that murderous legislation cannot touch—our food products. We can feed the world; but even here our "policy" has laid its crushing hand. Our tariff methods have swept our merchant navy from the seas, and all that we export has to be carried in foreign bottoms.

Meanwhile we were steaming on our way to St. Kits. The Caribbean Sea was as gentle as a dove, and flashed in the sunlight with a deep prismatic blue. We were gliding past islands that laid like gems upon the moving sea; some near, some far, all wrapped in purple mist. At one time we had in view St. Martin, St. Bartholomew, St. Eustatius, and Saba. The haze that laid upon the sea-line hid the bases of those mountainous islands upon which they seemed to float as thin as mist. We passed close under the southern end of Saba, the ship under half speed, as this is one of the sights of the Islands. Saba is a mountain rising in a vast precipice upon every side to the central mass, nearly 4000 feet high. A few red-tiled houses were huddled together here and there, some of them hanging on by their eyelids, as it were, to the edges of the cliffs, with nothing beneath them but the air and the crashing surf. The higher peaks were shrouded in the clouds, fragments of which clung to the sides and drifted down the gorges. We were so far away that we could see the silver lining to the clouds. Masses of vapor were piled up against the sun in dazzling whiteness, making the green gorges luminous in the creeping mist. On the side turned from the light, there was inky blackness with slanting streaks of rain, as though Saba in mountain, precipice, and riven glen had turned her face from the sun and wept in darkness. The effect was weird and strangely beautiful. I gazed as it receded from us until my eyes ached, while the island became a mere film of color on the distant sea.

Saba is a Dutch possession, with a scanty population, cut off from the fellowship of man. Strange to say, the industry of the island is ship-building. The graceful little schooners of sixty, or a hundred tons, so frequently met with among the Islands, are built here and lowered down the cliffs with ropes. It is a paradise for the doctor. He is the great man of the village. All who meet him take off their hats, and when a goat—the only animal on the island—is killed, a choice bit is always sent to him. We saw Saba on our return voyage in the glare of an afternoon sun and without the magic of its clouds and purple mist. It appeared naked and hideous. Paths could be seen to zigzag up the face of crazy-looking cliffs; here and there a few houses were perched upon bare rocks that quivered in the heat. It looked more fit for the abode of the damned than that of poor living humanity.

Had we seen St. Kits first we probably would have found nothing to criticise; but we had seen St. Croix and had fixed our standard of insular perfection. We set up the camera in various places about Basseterre, as the town is called, but the town was too English and conventional to be picturesque.

Night again found us steaming down the Islands over a gentle, phosphorescent sea. The trade wind was blowing from the northeast as steady as though manufactured by machinery. Nothing could give a more perfect example of earthly comfort than these nights at sea. We all studied astronomy under the stimulus of strange constellations. Orion and the Southern Cross were always subjects of interest; and which was the true cross and which the false one was forever being discussed and never settled. All the stars shone with great brilliancy, and owing to the excess of moisture in the air, twinkled like flash-lights. Venus ruled the sky, as the moon rose late, and was exquisite in her radiance. She came up about dark, and from then until near the zenith, she trailed her way over the restless water in a line of silver reflection that was lost in the faintly luminous mist that closed in the sky-line like a pathway from earth to heaven. A thing that one misses almost with a sense of personal loss is the absence of our northern twilight. Here the sun goes down with a quick burst of glory, and by the time the last segment has dipped below the sky-line night has closed down and blotted out every fragment of color from the western sky.

In the morning we were in port at Antigua. The town and bay were beautiful. Masses of irregular hills and cone-shaped mountains enclosed the bay. We were obliged to cast anchor about three miles from the shore, and had a rather rough passage in the boats of the negroes that lay about the steamer clamoring for passengers. Antigua is one of the oldest settled of the English Islands. The town, like those in most of the Islands, had little to attract us, and we made it a custom to hire carriages and ride into the interior. Here I remember we visited an old sugar estate conducted on a method of one hundred years ago. The motive power was a windmill; the rollers being placed below in the circular stone tower that carried the sails. Surrounded by palms it made a most exquisite picture, and I succeeded in getting a good negative of it. If the wind slacked while the rollers were choked with cane, the hands sat down and waited for the wind.

Everything about the place was on the same primitive model, yet the owner was quite content, caring nothing that the next estate, run by a rich company, had an 80-horse-power engine, vacuum pans, and a centrifugal drier. He was quite a young man, but he was an antique, a specimen of a race fast disappearing—the Creole English. He was thin to emaciation, dark as a mulatto, but every line of face and form indicated that he was pure white. There was a lethargic droop to the man that typified the hopeless struggle against fate that his race is making all over the world under hostile climate and environment. Among the hands about the sugar house we saw a magnificent specimen of a negro girl, who, in contrast to Mr. F., demonstrated the inexorable laws that govern the race-distribution of man. Under the conditions in which the white race exists in the tropics, there are developed forces which inevitably tend to extinction. It required just four generations to reduce the white man to the state we found him in. By the side of this decayed specimen of a noble race stood this magnificent girl. She was not more than half clad, revealing a skin as fine as silk, beneath which the slender muscles, hard as iron, played like serpents. Her waist was almost small enough to span, with a grand swell to her hips, tall, and straight as a bamboo, with a graceful sinuous movement as she raised a large tub of sugar to her head and carried it off with the ease of a trained athlete. Her shoulders and bust were splendid, modelled like an antique bronze. She was an emotion in ebony. Mr. F. told us that his sugar boiler, a white man, had taken her.

Here on this old plantation we have the whole story of the West Indian problem of to-day told with the force of a parable. The extinction of the white race, the exuberant vitality of the negro and the growing curse to the population, the negro half-breed. All these beautiful islands are in a state of material decay, and striking back, as the breeders say, into barbarism. England does not know what to do with them. She is trying the experiment of self-government, and if she succeeds it will not be many generations before we have the story of Hayti down the Islands to the South American coast. The negro under his natural climatic conditions cannot govern himself without drifting back into savagery.

Antigua is one of the most beautiful islands in the chain. The mountains are bold and precipitous, giving an exquisite sky-line as you approach it from the sea. Its fertility is not exceeded by any of her sister islands, so that we had here a profusion of beauty in tropic coloring and foliage. It was a matter of regret among us that the inexorable demands of trade obliged us to leave with only this glimpse of Antigua; but the next day we were more than repaid when morning found us lying snugly at anchor off the quaint old town of Plymouth, with the wonderful mountains of Montserrat casting their solemn shadows over us. Into these mountains we could gaze through the defiles which penetrated their rugged sides. The principal peak, ages past, had suffered an enormous fracture into its side which gave us a view of what appeared the interior of a crater. It appeared nearly inaccessible, and with the clouds, black and threatening, twisting over the rugged edges of the abyss, one never grew tired watching it and silently questioning the mystery of its depth.

In this little island there were enough of mystery and hatred hidden in its old-time history to populate a world. Montserrat was an English penal colony to which she deported Irish patriots after the "forties." Here they were let out to the planters and labored on the sugar estates. But time works its own revenge—to this day it is an Irish island. The Murphys, O'Briens, Sullivans, and other good, old names are heard everywhere, while the owners of these names are of all shades of color, ranging from the pure white of the Celt to the dull black of the African.

Plymouth is a walled town, and although the old fortifications are fast falling into ruins, enough remains to show that it was well able to take care of itself in the freebooting, buccaneering times. Every old house appeared to be a fortress, standing in the midst of a garden enclosed by thick stone walls. Between these walls ran irregular narrow streets, paved with large, flat stones, and overtopping them and shading the way were forests of palm, cocoanut, and breadfruit trees, broad-leafed plantains and weird, snake-like cacti. One of the streets near the landing was so quaint with its battered old walls, the palms and the broad leaves of the banana leaning over from the gardens within, and here and there a tower or picturesque gable, that I went back to photo-

graph it, and found the sun shining directly into my lens. I again visited the spot on my return, and had the good fortune to get an excellent negative.

Captain Hubbard, who always had the pleasure and comfort of his passengers in his care, gave us a picnic in a woods about two miles from town. We could secure carriages for the ladies only, and most of the gentlemen were obliged to walk. I never walked so far before under as hot a sun, and felt quite proud that I suffered as little as any one in the party. A thermometer went up to over 100°, but we would not allow the owner to state the exact figures for fear of the moral effect, as one of the party said. On the whole it was a very enjoyable affair. Several young English creole ladies joined the party. They were beautiful and well educated, with a very refined manner. I noticed the peculiar accent with which they spoke English. A very broad sound is given to the vowels, the words are drawled with something like an Irish brogue. This is to be noticed throughout the Islands, but its best examples are to be met with at Montserrat. We again at nightfall steamed away, and I shall never forget the night on deck after Montserrat. It was too enjoyable to lose any of it by turning in below, and nearly all the party stayed up till the small hours.

One of the sensations of this voyage was that of enchantment. At night you went to bed in one country and in the morning found yourself in another without any sense of a journey from place to place. Each island had its individuality. Customs, manner, accent, scenery, and products all gave a measure of difference sufficient to realize that you were among another people in another land. A vivid novelty, a feeling of expectancy, kept the mind alert and the body active without fatigue. During the evening Mr. H., a merchant of large enterprise and thoroughly familiar with the West Indies, and especially with Martinique, told a story, that, true or not, was so full of potential romance that we were strongly impressed with it.

Everyone knows that Martinique was the birthplace of the Empress Josephine. The Pagerie family still have estates there, and the old house in which she was born and the church with the baptismal records are shown to visitors. The daughters of the family of that generation all possessed great beauty, and a sister, younger than Josephine, excelled them all. After the marriage of the latter with Napoleon, a family council, in the hope of improving their reduced finances, determined to send the last daugher of the race to France to share in the brilliant fortune of her sister. She embarked for the port of Marseilles, and that was the last heard of the ship or of her beautiful freight. Years passed, and at last the news reached Josephine, while still at the side of Napoleon as Empress, of the strange and romantic history of her sister. The ship had entered the Mediterranean and was near her destination when she was captured by Barbary pirates. Passengers and crew were taken to an African port and exposed for sale as slaves, the beautiful Mdlle. de la Pagerie amongst the rest. The story of her marvellous beauty was so noised about that none of the dealers dare purchase her, for fear that the possession of a woman of such miraculous beauty would excite the jealousy of some more powerful Turk and cost the unfortunate owner his head. At last the fame of the beautiful captive reached the ears of the Sultan himself. A trusted agent was dispatched for her, and she was taken to Constantinople and disappeared in the Seraglio. From a slave girl she became Sultana, embraced the faith of the Prophet, and all the Sultans of Turkey since are descendants of the sister of Josephine, who was ruling in the land of her captivity, as near as a woman can rule in that polygamous land, while poor Josephine was enduring the humiliation and misery of a discarded wife.

This story is told in Martinique and firmly believed there. Mr. H. believed it, and relating it with all the embellishments and art of a good story-teller, held us entranced for nearly an hour on this night after Montserrat.

Ely Van de Warker.

NEWS ITEMS.

The Hoagland Laboratory.—The Trustees of the Hoagland Laboratory make the following announcement. Dr. George M. Sternberg, U. S. A., will continue as General Director of the Laboratory. George T. Kemp, Ph.D., Johns Hopkins University, will be Associate Director of the Departments of Physiology and Experimental Therapeutics. Dr. B. Meade Bolton has been appointed Director of the Department of Bacteriology, and will assume charge of that department in September.—*The Brooklyn Medical Journal*, August, 1889.

Typhus Bacilli in Water.—Several cases of typhoid have recently occurred in a town in the Province of Baden, Germany, and it came to light that three of the patients first affected procured their drinking water from the same well. The water was then examined, the strictest precautions being used to prevent infection from other sources. In three days the cultures were found to have developed on an average one hundred and forty thousand colonies to the cubic centimetre (about one-half cubic inch). Ten tests had been made, but only in one of these was there found a single colony of typhoid bacilli. —*Deutsche med. Wochenschrift*, July 4.

Vermont State Insane Asylum.—We learn from the *Boston Medical and Surgical Journal* of July 25th that Vermont is about to build a new State Insane Hospital at Waterbury. Five hundred acres of land have been purchased, of which thirty acres, in the vicinity of the Central Vermont R.R. Station, are to be used as a building site. The complete plans contemplate a three-story brick building, having a frontage of 900 feet. There will be a central administration building. The main building will consist of two wards, one for men and one for women, connected on each side by a corridor one story high. In each wing will be three two-story circular wards for the chronic insane. Each ward consists of a day room on the first floor, and a dormitory for 25 patients. There will be a general hospital ward, three stories high and 150 by 36 feet in size, with a capacity for 75 patients.

Italian Institutions for Rabies.—We learn from the *Lancet* of July 13th that Bologna, following the example of Milan, opened, on June 30th, an "Instituto Anti-rabbico," or institution for the treatment of rabies on the Pasteur method. The King, the Prime Minister, and the various civic and scientific bodies, as well as the townsfolk of Bologna, contributed the requisite funds. Every

considerable Italian city will soon, it is anticipated, be provided with an institution of the kind.

The Promotion of Illegitimacy in Vienna.—In connection with the obstetrical department of the hospital, and in the hope that the system would prevent induced abortions among the lower classes, the following plan was adopted some years ago: Any woman can enter the hospital, masked or not, as she desires; be known only by a number; live according to one of three grades—the cheapest costing about thirty cents a day; be attended in labor by skilful accoucheurs, and leave the hospital when she desires, with or without the child. If without the child, it is given a number, by which the mother can reclaim it even after years. When not reclaimed, the child, if a boy, is brought up as a soldier; if a girl, as a nurse. The only condition required of the mother is the payment of the small living fee (thirty cents a day), and enclosing her name and address of friends in an envelope to the secretary of the hospital, which is only opened in the event of her death while in the hospital. If all goes well, on her departure from the hospital it is returned to her unopened. This plan has, indeed, decreased the abortions and increased the population of Vienna, but it has also removed another check on free intercourse—the fear of becoming pregnant.—*The Medical Record*, June 15, 1889.

Rejected Contributions.—Medical editors are usually so glad to receive contributions that, whenever they feel obliged to reject a communication they do it in the gentlest manner possible, so as to discourage contributors as little as may be. It is, therefore, a matter of astonishment to read the reply which the editor of the *Medicinische Monatsschrift* makes to a contributor whose article does not please him. The unfortunate woman whose communication called forth the editorial strictures must indeed be thick-skinned if she was not hurt by the following, taken from the "Briefkasten" of the May number of the *Monatsschrift:* "Frau Emilie S., Buffalo, N. Y.: Your work on the 'Prevention of Yellow Fever and the Improvement of the Healthfulness of the Southern States,' we have returned to you as it is. Your ideas are not new and your way of writing not entirely correct. We do not know what is more to be regretted, the paper, the ink, the postage-stamps, or—a woman who knows no other way to improve her financial position than to discharge the cobwebs of her brain upon unsuspecting and harmless editors. Give up writing and take in hand the darning-needle and the coffee-pot; it is to be hoped you can work better with these useful objects than with the pen and the eucalyptus tree."—*Northwestern Lancet*, June 1, 1889.

A Submarine Expedition.—We learn from the *Lancet* that from Kiel will shortly sail an expedition to explore the submarine flora and fauna of the ocean, under the supervision of DR. HENSEN. The expedition, which is to last for several months, has been subsidized by the Emperor William to the amount of 80,000 marks. A special subject of investigation will be the effect of light on the oceanic fauna, and Dr. Henson, it is understood, will undertake a series of experiments with this object by means of a novel application of the electric light.

Pilsner Beer as a Diuretic.—DR. ADOLF GRUSS reports the following to the *Wiener klin. Wochenschr.*, June 14th. A female patient, aged seventy-four, suffering from valvular and mitral insufficiency, had for three months been treated with various diuretics without avail. The amount of urine excreted in twenty-four hours was only ten to seventeen fluidounces. The patient asked for Pilsner beer. Glad that she should evince a desire for nourishment, her wish was at once complied with. The first day she drank about ten fluidounces. To Dr. Gruss's surprise, on the same day, the excretion of urine increased to forty-four fluidounces. No other diuretic had been given for several days. It soon became manifest that as soon as she stopped taking the beer the excretion of urine again fell to eighteen or even ten fluidounces, but at once increased to forty-four fluidounces when the treatment was again resorted to.

Since then Dr. Gruss has prescribed Pilsner beer in many emphysematic patients suffering from hydrops, and its use has always been attended with marked success.

An Antidote for Phenic Acid.—The *Rev. de Thér. méd.-chir.* of June 15th recommends common soap as an efficient antidote in cases of phenic acid poisoning. The soap should be given as soon as possible after the poison has been taken, and continued until all toxic symptoms have disappeared.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 6 TO AUGUST 12, 1889.

By direction of the Acting Secretary of War, leave of absence for two months, on account of sickness, with permission to leave the Division of the Missouri, is granted ALFRED A. WOODHULL, *Major and Surgeon*.—Par. 5, *S. O. 178, A. G. O.*, August 3, 1889.

JANEWAY, JOHN H., *Major and Surgeon*, is hereby granted leave of absence for two months, with permission to apply for an extension of two months.—Par. 3, *S. O. 52, Headquarters Division of the Pacific*, July 29, 1889.

By direction of the Acting Secretary of War, WILLIAM B. BANISTER, *First Lieutenant and Assistant Surgeon*, is relieved from further duty at Fort Wingate, New Mexico, and will report in person to the commanding officer Fort Grant, Arizona, for duty at that station, relieving ARTHUR W. TAYLOR, *Captain and Assistant Surgeon*, who, upon being so relieved, will proceed to Fort Wingate, New Mexico, and report in person to the commanding officer thereof, for duty at that post.—Par. 4, *S. O. 178, A. G. O.*, August 3, 1889.

By direction of the Secretary of War, JOHN J. COCHRAN, *Captain and Assistant Surgeon*, now on duty at Fort Adams, Rhode Island, will report in person to the commanding general Department of the Platte, for temporary duty with troops en route to and at the summer camp at Fort Robinson, Nebraska. Upon completion of this duty, he will return to his proper station.—Par. 10, *S. O. 180, A. G. O.*, August 6, 1889.

By direction of the Secretary of War, the leave of absence granted WILLIAM C. GORGAS, *Captain and Assistant Surgeon*, in S. O. 84, July 3, 1889, Department of the Missouri, is extended two months.—Par. 2, *S. O. 182, A. G. O., Washington*, August 8, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, AUGUST 24, 1889. No. 8.

ORIGINAL ARTICLES.

CLINICAL NOTES ON COCILLANA IN DISEASES OF THE LUNGS.

BY DAVID D. STEWART, M.D.,

LECTURER ON THE DISEASES OF THE SPINAL CORD, AND, LATELY, CHIEF OF THE MEDICAL CLINIC, IN THE JEFFERSON MEDICAL COLLEGE; PHYSICIAN TO ST. CHRISTOPHER'S HOSPITAL FOR CHILDREN.

SOMEWHAT more than a year ago my attention was directed to cocillana, a newly discovered drug said to possess therapeutic properties analogous to ipecacuanha and to be worthy of trial in pulmonary affections. Scepticism regarding the virtues of so-called "promising" new remedies, and disinclination to essay their trial when having at hand drugs the efficiency of which experience had left no doubt, caused me to use it at first only occasionally and a trifle perfunctorily, without attempting, in the hurry of practice, to keep records of results, until a number of favorable ones induced me to begin its systematic trial. I felt then more inclined to do this, understanding that the supply of ipecac root, which had diminished greatly in the past few years, was in danger of total exhaustion, owing to the continued large demand having resulted in the destruction of the plant in accessible localities in the limited area of South America to which its growth is restricted.[1] In view of this, it seemed desirable that a substitute for ipecac be found. Whether we have such in cocillana I am unprepared to assert, not having had opportunity for the thorough clinical trial necessary to permit authoritative statement. I have, however, no doubt that as regards the sphere of influence of the two drugs on the respiratory organs the effects are not unlike, and the results obtained from cocillana convince me that it possesses therapeutic properties which render it even superior to ipecac in certain diseases of the air passages in which the latter is often used.

Cocillana is the bark of a tree—a species of Guarea, of the family Meliaceæ. Like its near relative, the Goanese Ipecac or Naregamia alata, of India, it is used at the place of growth as an emetic and purgative (very rarely the latter), and is poisonous as an irritant-narcotic in over-doses. It contains apparently an alkaloid. It acts locally upon the mucous membrane either when directly applied or when absorbed; in the latter case it is quickly excreted through the mucous membrane, the upper portions of which are successively more active in the elimination. It is excreted very slightly through the skin.

Specimens from Eastern Bolivia were brought to this country by Dr. H. H Rusby and were described by Dr. N. L. Britton, of Columbia College, as being a new genus of plants in the family Anacardiaceæ, under the name Sycocarpus Rusbyi. A subsequent study of better material caused him to withdraw this opinion and class the plant as above stated, in *Bulletin of the Torrey Botanical Club*, July, 1889, p. 189.

Histories were taken of forty cases in which cocillana was prescribed. These comprise 10 of acute, 1 of subacute, and 19 of chronic bronchitis; 5 of broncho-pneumonia, and 5 of phthisis. Nineteen of the forty failed to report after the first visit. These are not considered here, although I think it likely that some of the cases of bronchitis among them were benefited, if not cured, as sufficient of the drug was always given to last at least twelve days, and its effects in full doses seem usually to be exerted promptly. Of the 21 remaining, 5 were cases of acute and 11 of chronic bronchitis, 4 of broncho-pneumonia, and 1 of phthisis.

The shortest time that any of these were under treatment by cocillana was 6 days; the longest, 12 weeks; the average, 22 days. In many of the cases other drugs had been unsuccessfully tried when cocillana was begun; they were then discontinued and cocillana alone used, save in one or two instances in which a few doses of digitalis, chloral, or a laxative were given to meet a special indication.

The following are brief, selected histories from the twenty-one:

CASE IV. *Acute bronchitis.*—T. C., aged twenty-one; clerk. First seen July 19, 1888. Had had frequent and troublesome cough for about a week, induced by exposure. Cough was loose and expectoration easy. The lungs were full of large and small moist râles with a few scattered dry râles. There was vesiculo-bronchial breathing; no alteration in resonance. The breath was offensive and the bowels constipated. A purge was given the first night and concentrated tincture of cocillana was prescribed in half-teaspoonful doses, to be taken every three hours. He returned in four days stating cough was worse and that medicine nauseated him. Two days later he reported he was no better. Cocillana was discontinued.

CASE V. *Chronic bronchitis.*—H. M., aged fifty; carpenter. First seen July 30, 1888. Had had

[1] Notes on Ipecac and Cocillana. H. H. Rusby, M.D. Pharmaceutical Record.

winter cough for twenty years. Present cough had continued since the preceding winter. Expectoration was moderate in amount, mucous in character; no emaciation; no albumin or sugar in the urine; heart normal; no alteration in pulmonary resonance; râles in chest (their character omitted from the records). He was ordered a half-teaspoonful of concentrated tincture of cocillana every three hours. Reported in a week that cough occurred less often, expectoration had diminished in amount and was more easily raised. Ten days later he was no better; cough and expectoration were about the same. A week subsequently cocillana was discontinued, no decided improvement having resulted after the first few days.

CASE VII. *Chronic bronchitis.*—S. M., aged eleven; school-boy. Had had cough more or less constantly for five years when first seen on July 13, 1889. It was then very troublesome and moderately loose, with muco-purulent expectoration. He had night sweats and was emaciated. A physical examination showed dry and moist râles and harsh respiration without alteration in percussion resonance. It was directed that the chest be pustulated with a mixture of croton oil and sweet oil, and five grains of ammonium chloride in a half-drachm of compound licorice mixture were ordered to be taken every three hours. This was continued until August 1st, but very little improvement resulted. Fifteen minims of concentrated tincture of cocillana every three hours were then prescribed. On August 17th, when again seen, he was decidedly better. He felt stronger; night-sweats had disappeared; appetite had improved; cough was much less, and expectoration was more easily raised. On the 24th it was noted improvement had continued; râles had disappeared, though the breath sounds were still harsh. Sufficient cocillana was then given to last a month, in doses of fifteen minims four times daily. On September 24th, when last seen, all signs of bronchitis had disappeared.

CASE IX. *Chronic bronchitis.*—Mrs. M. T., aged twenty-one; housework. First seen August 14, 1888. Had had cough for two years. It was tight, paroxysmal, very troublesome, and much worse at night. There was constipation. A physical examination of the chest showed no dulness; diffused râles, mostly sibilant and sonorous; heart normal. Cascara was prescribed for the constipation and concentrated tincture of cocillana was ordered, in fifteen minim doses, every three hours. On August 14th it was noted there was improvement; cough was less paroxysmal and less frequent; expectoration was easier. From this on, cocillana was continued in the same dose. She was seen every week or so until November 20th, when the paroxysmal cough had disappeared and râles could no longer be heard. Cocillana was then discontinued and the compound syrup of the hypophosphites substituted. She reported the following March that there had been no return of cough.

CASE XVIII. *Chronic bronchitis.*—D. K., aged fifty; clerk. First seen February 1, 1889. He had had winter cough for several years. The present attack had existed since spring. Cough was frequent and somewhat loose. There were present chest pains; no fever; clearness on percussion; diffused, moist râles; normal heart. Ten grains of ammonium chloride in a drachm of compound licorice mixture were ordered to be taken every three hours, until February 7th, when, not having improved, a half-teaspoonful of concentrated tincture of cocillana, at the same interval, was substituted for this combination. On the 13th he was decidedly better; stated last medicine had "done miracles." The expectoration had lessened in amount within two days, was more easily raised, and cough occurred less frequently. A few scattered moist râles could still be heard. On the 16th these had disappeared and cough was only present infrequently. On the 23d he reported that cough had entirely ceased. Cocillana was then discontinued.

CASE XXI. *Chronic bronchitis.*—X., aged thirty-four, physician,[1] had had cough with muco-purulent expectoration for two and one-half months, when he began treatment with cocillana in April last. Had been in the hands of a brother practitioner, who had prescribed various remedies without benefit resulting. Cough had become so troublesome at night that it prevented himself and others from sleeping. Night-sweats and complete anorexia were present. The bronchitis seemed at its worst when cocillana was begun. Ten minims of the fluid extract were taken three times a day. The cough ameliorated much at the end of the first day, and a comfortable night was passed. During the second day he was caught in a heavy shower and thoroughly drenched, and remained in this condition an hour. As a result, a severe spell of coughing occurred on rising the following day. Cocillana was continued through that day, and in the evening cough had quite ceased and the lungs seemed as comfortable as they had ever been. By the sixth day of treatment, cough had entirely disappeared A noticeable gain in strength was appreciable, no doubt due to the improvement in his general condition. Night-sweats had ceased and increase in appetite had been immediate and great. The latter was thought to be the direct effect of cocillana, as it appeared shortly after taking the first dose and seemed affected by each succeeding one. Cocillana was discontinued at the end of a week, he feeling well and there being no recurrence of cough. After several weeks of immunity, cough gradually returned, though not sufficient to cause any degree of annoyance except during one or two days when a fresh cold was caught. Believes that a regular and persistent use of the drug would have effected a cure.

CASE I. *Acute broncho-pneumonitis.*—J. C., aged forty; hod-carrier. First seen July 13, 1888. Had caught a heavy cold three weeks before. Cough had been quite constant since. It was somewhat tight; expectoration slight. There were constipation, anorexia, daily chilly sensations, slight fever and sweats. He was able to be about, though bodily weak. Dulness was present in small areas through the left lung. Scattered large and small dry, with a few moist, râles could be heard in both

[1] From notes furnished by himself.

lungs. He was directed to rub the chest with a mixture of croton oil and sweet oil, and fifteen minims of concentrated tincture of cocillana were ordered to be taken every three hours. On the 16th, he reported he felt improved. The cough had loosened in one and one-half days after beginning treatment. Expectoration was less in amount and more easily liberated. Constipation was relieved. The dose of cocillana was increased to a half-teaspoonful. On the 25th, the date of his last visit, he reported he felt much stronger and that cough had disappeared. I did not see him at this visit nor thereafter. As no examination of his chest was then made by the assistant in charge, I am unable to state if the areas of slight consolidation had cleared.

Case XVI. *Chronic broncho-pneumonitis and plumbism.*—P. S., aged twenty-six; house-painter. First seen November 7, 1888. Cough had existed since the preceding summer. It was alternately tight and loose. Expectoration was scanty. When he first appeared for treatment cough was difficult and painful and there were rheumatoid pains in the chest and shoulder muscles and in the large joints. He had had occasional light attacks of lead colic. There were present cold feet, headache, palpitation of the heart on exertion, sweats, a blue line on the gums, no constipation. There was dulness posteriorly at the lower part of the right inter-scapular space. Dry râles were heard in both lungs. He was directed to pustulate the chest with diluted croton oil, and potassium iodide in a stimulating expectorant mixture was prescribed. Potassium or ammonium iodide, and, occasionally, ammonium carbonate, in an expectorant mixture, were afterward ordered and continued until November 24th. At that date he was much improved and discontinued treatment, not returning for inspection until January 15th. The dulness was then less than at first, but cough was very troublesome. A careful examination of his sputum for tubercle bacilli gave negative results. Concentrated tincture of cocillana was prescribed in half-teaspoonful doses, every three hours. He reported on January 23d that cough had disappeared in two days after beginning cocillana. The dulness posteriorly still persisted. Cocillana was continued. He has not been seen since.

Of the cases of acute bronchitis, Case IV. alone made more than two visits, so that a report on the use of cocillana in the remaining four is somewhat incomplete. It was noted that two (Cases X., XI.), at the date of the second visit, were improved; cough and expectoration had lessened. One of these stated that the expectoration, though less in quantity, was more easily raised. These cases were of average severity and had lasted two weeks. In both, the cough was somewhat tight. One of the remaining cases (Case XIV., seen in February) reported that he was not improved, several days after his supply of cocillana should have been exhausted. He admitted not taking it with regularity. His occupation, blacksmithing, had exposed him to much sudden changes in temperature. In this case there was present an acute pharyngitis, in addition to a pronounced bronchitis of two weeks' duration. In the fifth case, which when first seen had lasted a week, there was no change after ten days' treatment under doses of fifteen drops of the tincture of cocillana. This quantity was afterward increased to a half-teaspoonful. As stated, the case was not again seen.

A more satisfactory report can be made on the cases of chronic bronchitis. Most of them were under observation for a longer period than the acute cases. When these appeared for treatment the average duration of the symptoms was thirteen months. The shortest period was two and one-half months; the longest, five years. Five of these cases were cured; three were decidedly and two moderately benefited. One (Case V.) seemed to mend at first, but the improvement was not maintained, so that cocillana was stopped. All of the five that were noted to be benefited but not cured, were doing well at their last visit, and the indications seemed to be that a cure would result if they continued treatment. It may be that some of these were cured and did not afterward report the fact, but of this there is no certainty.[1] Too great a press of work at that time prevented me from following the cases as closely as I desired.

All of the four cases of broncho-pneumonitis were improved as regards cough and expectoration, and two of them quite markedly. Histories of the latter two have been already related. One of the others, a lad of seventeen, who had had a broncho-pneumonitis of two weeks' duration, was cured by the ammonium salts, but suffered a relapse. There was a small area of dulness at the left base posteriorly when he re-presented himself for treatment. Cough was troublesome and expectoration difficult. Cocillana (concentrated tincture), in doses of fifteen minims every two hours, at first caused nausea, which, after a short time, disappeared. Cocillana was persevered in, but on the twenty-first day of treatment dulness at the left base persisted, though cough was much less troublesome and expectoration far easier than before this drug was begun.

The only case of phthisis in which cocillana was prescribed alone that afterward reported progress was not benefited. There was consolidation of the anterior and posterior apices on the left. Cough had been incessant for three weeks. There were night-sweats, loin pains, emaciation, and atonic dyspepsia. At first there seemed to be slight improvement, but on the twentieth day of treatment cough and night sweats were as bad as before and the general condition had not ameliorated.

A conjoint analysis of the twenty-one cases shows that sixteen of them were improved while taking cocillana, and that five of the sixteen were cured; that these five were cases of chronic bronchitis, and

[1] A renewal was given to each of the five at their last visit.

that the symptoms which were most distinctly influenced were cough, expectoration, night-sweats, anorexia, and constipation.

In all of the sixteen in which cough was not removed it was lessened. Expectoration was diminished in amount in all of the sixteen in which it was not entirely checked, and in six of the sixteen in which expectoration was difficult before cocillana was begun it became much less so later under this drug. In at least seven the cough became looser as it diminished in severity and frequency. The lessening in cough and in the amount of expectoration usually occurred within the first week. Another of the twenty-one (Case V.), who reported early improvement in cough and diminution in amount of expectoration, which also was more easily raised, stated at a later visit that this amendment was not maintained, so that this case is not classed with the improved in the above analysis. Two of the twenty-one (Case IV. and that of phthisis) stated that cough was aggravated rather than improved by cocillana.

Night-sweats present in three of the sixteen, disappeared in two. Appetite was decidedly and early improved in three who complained of its loss when they first came under observation. In three of the twenty-one it was noted that the bowels were somewhat looser while cocillana was being taken, though no laxative had been administered. It was not supposed that this was due to any special action of the cocillana until my attention was very recently directed to it by Dr. Rusby, the discoverer of the drug, too late for inquiry to be instituted as to its frequency in others who had made no mention of it in specifying results of treatment. Two cases made complaint of nausea while taking the drug in moderately full doses at short intervals. In both, however, this effect was quite ephemeral, soon ceasing though the medicine was continued.

It results from the foregoing analysis that cocillana is serviceable in bronchial catarrh, especially the subacute and chronic forms, when accompanied by scanty or moderately profuse secretion, whether the cough be tight or loose. It seems to possess the power to render cough less frequent and difficult and the bronchial secretion less viscid and more easily expectorated while at the same time it diminishes it in amount.

Perhaps the best preparation of cocillana for administration is the fluid extract, because of the relative smallness of the dose: seven and one-half minims of it equal about half a fluid drachm of the concentrated tincture. The fluid extract is to be preferred to the tincture in cases of acute bronchitis, since the amount of alcohol contained in the latter is apt to aggravate the inflammatory condition. In cases of chronic bronchitis, broncho-pneumonitis, and the bronchitis intercurrent with phthisis, the tincture is not open to this objection. The dose of the concentrated tincture I employed in most of the cases is, I am told, somewhat too small: an average dose equalling about three-fourths to one fluid drachm.

2620 NORTH FIFTH STREET, PHILADELPHIA,
August 1, 1889.

THE CLIMATOLOGY OF HEMOPTYSIS IN CHRONIC LUNG DISEASE FROM AN ETIOLOGICAL AND THERAPEUTIC STANDPOINT.[1]

BY ROLAND G. CURTIN, M.D., PH.D.,
OF PHILADELPHIA.

IN glancing over the field we are confronted by so many and varied influences of climate at work both in causing and preventing hemoptysis that the subject will be best considered by taking up each factor separately and discussing it, as to its bearings on the symptom under consideration, and then tabulating the result.

If the chronic lung disease is removed by climate, this, a mere symptom, is necessarily ended. We must be careful in our study not to magnify hemoptysis, which is, as we have called it, a mere symptom, into the prominence of a distinct disease. The great practical point for us is to consider the subject in such a way that an insight may be gained as to the best prospect of relief afforded by climate for our patient who suffers from hemoptysis.

We have all felt the want of a definite knowledge for the decision of a climate proper for a patient suffering from hemoptysis. Hemorrhage resulting in the sudden death of a citizen, away from home and relatives, may cause reproaches to be showered, perhaps deservedly, upon the medical adviser who has recommended a change of climate. A definite knowledge of this subject may avert such a catastrophe.

In glancing over the field certain points are suggested to us. First, I will give a brief summary of the more important causes of bleeding from the lungs in chronic pulmonary disease. We are liable to hemorrhages from the lungs caused:

1. By capillary congestion of the bronchial mucous membrane.
2. By congestion of the parenchyma of the lung.
3. From erosion of bloodvessels from the ulcerative process.
4. Predisposition from alteration of the blood, as in hæmatophilia.
5. Atmospheric influences.
6. Nervous influences.

The hemorrhage may be bronchial, capillary, arterial, or venous.

I will briefly enumerate the principal factors under the head of *climate* as we shall study it. It includes all the influences exerted on the atmosphere by the

[1] Read before the American Climatological Association, June 25, 1889.

geography, meteorology, geology, botany, and astronomy, whereby the human body is affected. The principal climatic conditions affecting hemoptysis are included under the following heads: heat, moisture, altitude, asepsis, rarefaction of air, etc., which will be separately considered, and in detail.

I will first take up the subject of *rarefied air*. It is usually a pure air, having no germs or malaria. An elevation of 16,000 feet takes off one-half of the air-pressure at the sea-level (fifteen pounds to the square inch). Any fraction of the above height has its corresponding effect on the surface pressure. The following experience of those connected with the Oroya Railroad, in South America, is given in *Bell's Climatology*, page 82:

"This withdrawal of pressure often occasions the most severe symptoms of vertigo, headache, nausea, and vomiting, all more or less alarming, and attended with profound prostration. The whole are attended with increased respiration and rapid action of the heart. Dr. Ward says some are affected with fearful nausea and vomiting, comparing it to the worst form of sea-sickness. Others suffer from severe frontal headache, palpitation of the heart, etc. From the violence of the heart's action it really seems at times as if it would burst the walls of the chest. Occasionally severe hemorrhage occurs from all the avenues of the body. The respirations are increased from three to five times a minute. Dr. Ward says he has counted forty-three respirations and 148 pulse in a minute at an elevation of only 9000 feet, and that the pulse is *always* increased in frequency but not in volume. A person who at the sea-level has a pulse of 75 per minute, would find it increased about ten beats at an altitude of 10,000 feet, and would experience ten additional beats for each 1000 feet of added altitude. The rule is that no one passes for the first time an altitude of 16,000 feet whose pulse does not mount to from 130 to 150 beats in a minute."

When a person rises rapidly in a balloon to a great height, blood sometimes oozes from the mucous membrane, owing to the withdrawal of the usual atmospheric pressure, and the increased pressure in the bloodvessels from increased heart action. This is the so-called "balloonist's hemorrhage." To illustrate more fully the effect of being suddenly brought into rarefied air found at a great elevation, I quote from *Bell's Climatology*, page 80:

"A most singular illustration of its effects was given me by Dr. Heath, who is the surgeon employed on one of the Peruvian railroads now building from Packasmayo to the Andes. While making this trip over the road with him, he informed me that the visible effects of this existing cause were quite common in his experience. He mentioned an incident he witnessed far up on the line of this road. He experienced one day as he approached a party of workmen on the road a severe and sudden pain in his side, causing him to 'double up.' He, however, managed to walk on, and one of the workmen hailed him to stop and see several men who were ill, and had been taken that instant with severe pains, etc. What was still more wonderful in his statement of coincidences, but which has since been vouched for by the others, was that at the same moment he felt this pain he saw two birds which were flying overhead fall to the ground and were picked up dead. The ordinary effects of *rarefied air* are a paralysis of the cutaneous nerves, and redness of the skin from dilatation of the capillaries. This effect on man might, if exerted upon a bird, produce sufficient shock to cause death."

If the bloodvessels and tissues within the lungs are weakened by degenerative changes, or if the bloodvessels are weakened by the ulcerative process, trouble might ensue from the decreased air pressure *without*, especially as the increased action from the heart *within* would assist in producing a hemorrhage.

To show you that simple rarefaction of the air may produce hemorrhage in chronic lung disease, I will cite a case which bears upon this point. A patient with a history of chronic cough and dyspnœa for three years, upon examination of the chest, gave indication by the physical signs of consolidation and some softening. He had never had hemoptysis. At the Hospital of the University of Pennsylvania we had an apparatus for the purpose of treating patients with rarefied air. After breathing a few inspirations of rarefied air for the first time, an alarming hemorrhage took place, which continued for half an hour. No hemorrhage ever followed this.

Dr. Theodore Williams, in the *Lancet* of May 12, 1888, in his data of the analysis of 141 cases of phthisis treated at an altitude varying from 5000 to 9000 feet, concludes that the climate is useful in cases of hemorrhagic phthisis, and that hemoptysis is of rare occurrence at the mountain stations. In the discussion of the paper of Dr. Williams, it was stated that the effect of altitude was to lower arterial tension, and that this might explain the freedom from hemoptysis. When hemoptysis did occur, it was owing generally to too sudden arrival at great heights. The hemorrhage was then of the order known as "balloonist's." Under any circumstances it will be safer to elevate your patient slowly. Where the ascent is by the conveyance of rapid trains, you can direct him to stop at stations on the road, so as to prevent the danger occasioned by a sudden arrival at a great altitude.

If the effect of elevation is to cause a lowering of arterial tension, as stated by some authorities, this gradual elevation of the patient will allow this factor to come into play, thus saving him from the danger of balloonist's hemorrhage.

Rarefied air is almost always associated with a dry and pure condition.

Sea air or *tide-water air* is a condensed air, and opposed to a rarefied condition of air in its action on the human frame, for here we have the full pressure of fifteen pounds to the square inch. Associated with the pressure, there is at the seaside a condition which is very unfavorable to tubercular patients. Besides the increased air-pressure without, and the increased arterial tension within, we have a slowed heart. Sea air is almost always moist, and this, with the irritation of salt always in the air,

hastens the ulcerative process, and counterbalances the good effect of the denser air.

In syphilitic phthisis the denser air and the increased arterial pressure are, I believe, beneficial in a curative way, as shown in my paper read before this Society two years ago in Baltimore. Seaside air, like sea air, is more moist than inland air; even more so than that at mid-ocean; but it is more variable as to temperature than out at sea or an island at the same latitude. The blood pressure is less from the slowing of the heart's action, and the denser air gives support to the bloodvessels, and the weakened tissues and weakened bloodvessels. These two conditions increase the danger of hemorrhage.

Another favorable condition experienced by a patient first arriving at the seashore is a result of a calming influence generally exerted over the nervous system, by which the patient will sleep longer and better for several nights. This quiet condition would in itself tend to prevent a hemorrhage, but, again, the ulcerative process is also generally hastened, tending later on to more danger. The air of fresh-water lowlands is apt to be dangerous to a patient from the miasmatic influences which are often present as well as from the increased moisture.

Cold air. What is the effect of a low temperature upon the body? The tissues and bloodvessels contract, especially the capillaries, driving the blood from the periphery toward the centre, not, however, with sufficient force to cause a dangerous internal congestion. Cold tones up the tissues in contact with the air, bracing them for their work. It has a beneficial effect upon the appetite, and favors assimilation, strengthens the nervous system, imparting internal vigor, while the lungs are also able to resist the increased blood-pressure within the arteries, owing to the strengthening effect of the reparative action of lowered temperature.

Warm air. The effect of continued warm air is to cause a debilitated and relaxed condition of the tissues and bloodvessels, which would in itself rather tend to the exudation of blood from the diseased tissue of the lungs. The influence of the relaxed state of the system at large, would have a tendency to diminish the force of the heart, thereby slowing the circulation, and consequently decreasing the danger of hemorrhage.

Dry air desiccates the pulmonary tissues, hence less moisture not only favors the return to health of the tissues affected by chronic disease, thus preventing the flow of sanguineous fluid, but it has also the immediate effect of preventing the oozing of blood from the surface of the altered lung tissue. Dry air is usually aseptic and the messenger of health.

Moist air influences the tendency to hemoptysis by causing a moist condition of the tissues, macerating and liquefying them, and it thus unblocks the bloodvessels, dilutes the blood, and makes it more fluid, all of which may cause the walls of the vessels to weaken, as well as a tendency to the breaking-down process in the lungs, causing a greater danger of hemorrhage. Moist air is usually the bearer of effluvia and miasma, which are detrimental to the health of the patient.

The air of an elevated region is usually an *aseptic air.* It purifies the blood, thus bracing up the system, favoring the healing process. This air is an anti-bacillary atmosphere, hence the healing process is assisted by the destruction of germs in the diseased lungs. An atmosphere of this kind is usually cold and dry, and aids in the arrest of decomposition. These factors all assist in causing an improved condition of the diseased tissue, which is the most favorable solution of the patient's case.

Home sickness (nostalgia) is one of the compli cations which sometimes attend a change of residence. It has a very depressing effect upon the mind and body, which may prove to be disastrous in a case with a tendency to pulmonary hemorrhage. To show the effect of depressing emotion on a case of hemoptysis, I will cite three cases that came under my observation.

Nervous influence may sometimes affect hemorrhages independent of other causes.

To illustrate the influence of the nervous system in producing hemoptysis as well as other hemorrhages I will first cite the case of a woman having a small phthisical area at the right apex, as shown by bronchial breathing, impaired resonance, progressive emaciation, and a slight cough, who was one day shocked by seeing a wagon draw up in front of her house. Supposing that it contained the body of her husband, she was immediately seized with a profuse hemorrhage, and died in a few moments. The corpse which had occasioned her alarm had been by mistake drawn up to the wrong door. It proved to be the body of a man who resided in the next house. In the autopsy it was seen that the lungs were merely indurated, the breaking-down process had not commenced.

To illustrate further the influence of the mind upon hemorrhage, I will cite the following case:

A child about twelve years of age, a patient of Dr. Ogden's, was suffering from typhoid fever, with profuse hemorrhages from the lungs, stomach, fauces, nose, mouth, bladder, and bowels. The amount of blood lost was sufficient, if it continued, to kill the patient in a few hours. We gave an unfavorable prognosis to the mother of the child. She went with tears in her eyes into the room where the child was lying. The child in a whisper said: "Did the doctor say I was going to die? Don't cry, mother, and I will get well." The blood in a short time began to flow less freely, and in about eight hours it stopped entirely.

The grief of the mother was a shock to the nervous system of the child, which, in my judgment, saved its life.

Here we have in one case an illustration of hemoptysis being caused by emotion, while, in the other two, of its being stopped by the same cause.

A woman with chronic phthisis was seized in the morning with a profuse hemorrhage from the lungs. In the latter part of the afternoon she was taken upstairs to her room, and a fire was kindled in a stove in which her son had previously concealed a quantity of gunpowder. An explosion ensued, destroying the stove. The greatest solicitude after the explosion was for the patient. But it was found that the bleeding had been summarily arrested by the shock of the explosion.

Homesickness will nullify the effect of any climate.

There are certain influences at work when a change of residence is made that are not enumerated in the foregoing list, which I think belong to climate, and as they may work to the advantage or disadvantage of a patient with a condition inclining to hemoptysis, I think them worthy of detail.

An out-door life is generally a life of exercise. The pure air favors repair, by improving the general condition, and is often a strong factor in a change of residence. Vigor is imparted to the system in general.

An in-door life is usually a life of quietude in a vitiated atmosphere which leads to a further degeneration of the diseased tissue, and is a cause of weakness. A feebleness of the system at large is engendered by such a life.

Sunshine. A patient living in a crowded city, shaded between walls, and with, perhaps, many cloudy days, is subjected to depressing influences. On removing a person so situated to a region with much sunshine, and to an out-door life, he will be benefited and greatly exhilarated by such a change. With such a change he will, of course, have a drier and purer air, which must tend to have a beneficial influence on the local condition. The general improvement incident to a change of residence is due to all the foregoing factors. All tend to strengthen the weakened tissues, and favor a cure of the existing cause.

Atmospheric influences. Aside from the usual climatic influences before enumerated, certain conditions seem to favor hemoptysis. I have noticed both in my private and hospital practice, several cases of hemoptysis developing on the same day. In two hospitals I have had from two to five cases develop, on the same day, under my care—a number greater than during the whole of the rest of the year—and these attacks lasting, perhaps, two or three days. They occurred in winter, in mild weather, and with a moist atmosphere. No epidemic of pneumonia or influenza followed this atmospheric disposition to hemoptysis. Phthisical cases are generally the sufferers at these times. No disturbances in the temperature of the patient follow these attacks. I have known three years to pass without any such hemorrhagic epidemic, and have observed two in one year, about two months apart. I recall five epidemics of this kind. And now, if I have two or three cases in my private practice, I ask the resident physician of the hospital, upon arriving there, how many cases he has. The answer is, "I have one, two, or three cases." What is the cause of the foregoing tendency? It seems to be atmospherical, but the specific cause I cannot give. I merely call attention to this observation that others may arrive at a true solution.

Having considered the factors and climate that influence hemoptysis, I will tabulate them under two heads.

First, the preventative and curative, and second, the causative.

PREVENTATIVE AND CURATIVE ELEMENTS.

Rarefied air tends to prevent hemoptysis by arresting the ulcerative or other diseased processes, and also by lowering the arterial tension. This climatic condition probably greatly overbalances the unfavorable tendency of the increased heart action, and loss of support to the lungs from diminished air pressure.

Cold air contracts the tissues and bloodvessels, thus preventing a flow of blood when a tendency to hemoptysis exists. It is beneficial by its general invigorating effects to the system at large.

Dry air robs the diseased structure of its moisture, decreases the fluidity of the blood, and blocks up the bloodvessels, all favoring the arrest and prevention of bleeding.

Aseptic air. The purity of this variety of air favors repair and cure of the lung disease, and kills or dwarfs the action of the disease germ.

Out-door life, when not associated with too much exposure, exertion, or fatigue, is beneficial.

Sunshine is beneficial, inasmuch as it improves the general nutrition.

CAUSATIVE ELEMENTS.

Sea-level air, by its greater density, diminishes the tendency to hemoptysis, but the increased arterial tension, and the moisture which are usually present in such a locality more than counterbalance the beneficial effect of the support given by the air pressure.

Salt air has a bad effect on tubercular lung disease by hastening the breaking-down process. The effect is probably good in syphilitic lung troubles, and sometimes in simple chronic inflammatory lung affections (not tuberculous).

Moist air has a very deleterious effect, by hasten-

ing the ulcerative process, as well as by liquefying the blood and secretions, and macerating the diseased surface in the lungs, thus rendering the tendency to the oozing and flowing of blood more liable.

Warm air relaxes the tissues and bloodvessels and enervates and relaxes the system at large.

From the foregoing arguments we should conclude that each case should be carefully studied, in all its phases, before deciding upon a change of residence. On a high mountain (say from 5000 to 10,000 feet), a residence far removed from the seacoast, is best for a patient with a tendency to hemoptysis. At a location of this kind one would probably have not only a rarefied, but also a cold, dry, aseptic air, factors which would be most beneficial. Care should be taken that the elevation of the patient should be gradual and not too rapid, otherwise the early effects of a sudden elevation might be followed by unpleasant results. A case of syphilitic phthisis will probably be benefited by sea air, while a tubercular patient would in all probability be injured by such a residence.

FACTS AND SUPERSTITIONS CONCERNING PREGNANCY AND PARTURITION, AT SWATOW, CHINA.

BY A. M. FIELDE, M.D.

NEARLY all the Chinese women maintain a sitting posture during labor and delivery. A few are unable thus to bring forth the child, and these are called "recliners."

The umbilical cord is never divided until after the emergence of the placenta, because it is supposed that this would cause the contents of the womb to rise and remain among the internal organs, causing speedy death. After the appearance of the placenta, the cord is tied by a thread, about one inch from the umbilicus; a loop is made by bringing the distal portion toward the body; a second knot is tied securely upon the first over the doubled cord, "to prevent the entrance of wind," and the cord is then cut near the second knot. The portion of the cord left with the placenta is not tied.

If there is much delay in the expulsion of the secundines, various methods are pursued in assisting the patient. The mother-in-law or midwife goes behind the house in which the patient lies, raps smartly with a carrying-pole on the wall, and shouts, "Is it out yet?" An assistant responds from inside the house, "It is out." This performance is repeated, with short intervals, until the desired result is effected.

Another method of hastening the expulsion of the afterbirth is to have the patient lean over a horizontal bar, supporting herself partially upon her hands. This sometimes starts the adherent placenta, but is discomforting to the attached infant.

Some midwives insert the hand and remove the placenta, but mothers greatly fear this operation. It is asserted that one woman had her liver pulled out by the attending midwife, and consequently died. Native male physicians are under no circumstances called in cases of childbirth.

A girl that is born face downward, or one that is guilty of micturition or defecation immediately after birth, is straightway smothered, because of a superstition that such a child will be injurious to its parents.

A pregnant woman is advised not to handle edged tools. If she does so, her offspring is likely to lack a finger or a toe, or to have a harelip or a split ear.

Two pregnant women will not sit together upon the same bench. As each woman hopes that her child is a male, and as it is thought that there may be an occult exchange of sexes between embryos that are brought into vicinage, it is considered wise to avoid the risk of having the supposed masculine tenant of the womb superseded by a female.

If a child has been touched by a pregnant woman, and sickens soon afterward, its mother winds a skein of silk, made up of threads of five colors, around a potato, and roasts the potato in the ashes. If the silk is burned during the process of roasting, it indicates that the ailment was not caused by the touch of the pregnant woman. But if the silk is not burned, as sometimes happens, then the mother of the injured child throws the potato over her house, and it is believed to produce a miscarriage in the woman who has caused the disease, while the sick child recovers.

Many men have purses made by women approaching confinement, hoping that the woman's plethoric condition will be mystically reproduced in the money-bag!

SWATOW, CHINA, April, 1889.

TREATMENT OTHER THAN CLIMATIC OF HEMOPTYSIS IN CHRONIC PULMONARY DISEASE.[1]

BY JAMES B. WALKER, M.D., PH.D.,
OF PHILADELPHIA.

IN considering the treatment of a symptom of even so grave a seeming as hemoptysis, the prognostic significance thereof is of much import. Is the occurrence of hemoptysis a grave indication? This query at once opens for consideration the various pathological conditions resulting in hemorrhage, and the response to it must be correspondingly varied. I take it for granted that we are united in considering hemorrhage from the lungs at times absolutely harmless and even remedial; and at others so serious as to demand the utmost efforts of

[1] Read before the American Climatological Association, June 25, 1889.

the physician in its arrest; and even at times, though happily rarely, so excessive as to produce a fatal issue before aid can be summoned.

Hemoptysis, early in phthisis, is, in the vast majority of cases, slight, and, unless long continued, calls for no medicinal interference. Hygienic measures usually suffice. These consist in placing the patient in a cool room, with light and loose covering, only sufficient to avoid a feeling of chilliness. His head and shoulders should be slightly elevated, except where syncope is threatened. During and immediately after the hemorrhage, rest of body should be enforced, the completeness of this rest being commensurate with the gravity of the hemorrhage or the dangers of a recurrence. It may necessitate as nearly absolute immobility of the entire body as is possible to obtain; the interdiction of speech; the use of the bed-pan and urinal for the ejecta, and the spoon or feeding-cup for the ingesta; and the muscles of attendants for all needful changes of position.

All mental and emotional excitement is to be subdued. The most important of these is fear, and, considering the gravity encircling in the popular mind, even a slight loss of blood from the lungs, it is not surprising that this should be. This is usually quieted easily by a calm and reassuring deportment of the physician, and is, of course, intensely accentuated by the slightest evidence of alarm or even anxiety from him. The bleeding organ should be especially placed at rest, and, in addition to the avoidance of speech, unnecessary coughing should be checked, usually requiring opiates in all cases of irritative cough, or where there is more than the slight effort necessary to remove the exuding blood.

The diet should be bland and digestible, small in quantity and, of course, nutritious. It should be given cool or cold. Milk, or, where acids are frequently repeated in the medication, the whey thereof, cold meat, teas, and ice. Water should be given sparingly, except where the hemorrhage is excessive, when it may be required more abundantly. So long ago as 1792, Davidson reported in the *Medical Facts and Observations*, published in London, two cases of hemoptysis cured (?) by total abstinence from liquids. Stimulants are to be avoided.

Attention to the various emunctories is important, especially the bowels, and slight saline laxatives are beneficial in even the mildest cases.

In many cases nothing further will be needed. In the graver forms, or in even slight attacks of patients naturally weak or debilitated by disease, more or even most decided efforts may be demanded, in addition to the purely hygienic. As nature is usually equal to the emergency, aided, unaided, or even when slightly hindered, a vast number of specifics have been vaunted. And it is equally true that as at times she is powerless, more efficient aids have been searched for.

Measures which relieve the local engorgement deserve, perhaps, first consideration. Dry or moist heat or counter-irritants to the extremities; aconite or veratrum viride; free saline purgation; iced compresses or ice-bag, limited to the area overlying the bleeding point where discernible, and kept in place but a little while at a time but frequently repeated; heat to the spine; venesection—of, however, questionable utility in any case of hemoptysis now under discussion, viz., in chronic pulmonary disease; Dr. Müller's substitute for venesection, an elastic bandage around one extremity, allowing it to remain for six or eight minutes, and applying another to the other extremity before loosening the first, which latter must be done slowly, a method contraindicated where the pulse is weak and blood poor in quality; dry cupping in the interscapular or infra-clavicular regions; the popular remedy, a spoonful of salt, whose efficacy, according to Skoda, is due to the gastric or gastro-intestinal irritation induced, are some of the measures by which relief to the area of engorgement is attempted.

The induction of measures to occlude the bleeding orifice by aiding the occurrence of the clot, and by diminishing the orifice to be occluded, call for measures classed as hemostatic, most of which aid directly or indirectly both objects. The astringents are thought by most to be efficacious hemostatics, and are used by most practitioners either internally or topically in spray or vapor.

For internal use gallic acid or acetate of lead is employed. If gallic acid is chosen, it should be given in ten-grain doses every two, three, or four hours. If acetate of lead is used, it may be given in pill with opium extract, unless the latter is contraindicated, or, as the Drs. Williams recommend, in five-grain doses in a solution containing an excess of acetic acid every two, three, or four hours, with a magnesium sulphate draught every morning to avoid the gastro-intestinal effects of the remedy. The mineral acids, and especially the sulphuric, are held in high esteem by many on account of the combined astringent, refrigerant, and roborant effects. Sulphuric acid may be used with other astringents or hemostatic factors and add not a little to their efficiency. A class of remedies similar in the results obtained, and, according to many close observers, more efficacious, is the essential oils, especially of turpentine and erigeron. These may be robbed of their one objectionable feature, their disagreeableness, by administration in doses of five or ten drops in capsule or closed French pearl or globule, or the closed soft capsule of Parke, Davis & Co.; the ordinary bivalve capsule is not admissible. Excreted in part by the pulmonary mucous mem-

brane, the terebinthinates are more certain to come in contact with the bleeding point or points, and, both rationally and by observation of many, they are more likely to arrest the hemorrhage, albeit their manner of doing so is not satisfactorily demonstrated, than are the astringents which depend for their local effect on the solution in the great volume of blood serum. Terebene may be substituted for the turpentine.

For topical application, alum is most vaunted; next to this a solution of iron perchloride and gallic acid; but, while these are usually chosen because they can be sprayed cold, I have seen the vapor of turpentine apparently promptly effective in a severe hemorrhage when these and other astringents had failed. It is stated that some of our North American Indians smoke Canada balsam mixed with their tobacco in cases of hemoptysis with apparent efficacy. Eucalyptus, matico, hamamelis, and a number of other astringent substances are used and, no doubt, useful; but it would seem desirable in most instances to depend on definite solutions of the active properties themselves than on more or less indefinite compounds, natural or artificial, containing them.

But of all the aids to nature in closing bleeding orifices, where aid is absolutely in demand, ergot must be given preference. This may be given by the mouth, but if prompt action is needed, should be administered hypodermatically, and repeated as often as the urgency of the case demands. If given by the mouth, it may be made more efficient by combining sulphuric acid, dilute or aromatic, repeated every four hours. Digitalis is frequently effective, and in weak hearts with lowered vascular tone it is strongly indicated. Its good effect is probably due chiefly to the contraction of the arterioles induced by it.

There are other plans of treatment which should, perhaps, be at least mentioned. The use of ipecac, so highly praised by Graves and Trousseau, administered to induce nausea, or even vomiting, is scarcely needed and is of doubtful advisability in the class of cases we are considering, especially when so many apparently less objectionable measures are at our disposal. Dr. Neale, in *The Medical Digest*, refers to the method in use by the Chinese and Malays in cases of hemoptysis. It consists in the administration of a half pint of the urine of a child. While this may be efficacious, it is not likely to be extensively adopted by civilized communities even as a household remedy.

If fever result, indicating local inflammation, active counter-irritation by blister or less violent agency; with quinine internally and the use of astringent or terebinthinate or antiseptic inhalations, should be resorted to. Rest should be enjoined in these cases until the fever subsides. But in the majority of cases enforced rest must be short-lived and cease with its necessity. After the hemorrhage has been securely arrested this measure should cease, and the disease which has occasioned it must be combated by improved nutrition, which will demand a certain and, of course, a varying amount of bodily activity and a more liberal dietary.

Preparations of larch bark have been used and may be substituted for turpentine, which they resemble in composition and effect. Hamamelis has proven effective, according to Brunton, in cases where ergot and digitalis have failed, while in others it has failed and they have succeeded. It may be given by inhalation or internally.

The treatment of hemoptysis during the attack is, however, not so important as during the intervals. Every case of hemoptysis, at whatever time occurring, from the incipiency to the stage of cavities, is of serious moment. As already stated, it is rarely of gravity in itself, but it is of gravity as indicating a pathological condition which makes a hemorrhage possible. As aneurisms are rare, save from direct violence to the artery, except where there exist defective vessels, so complete rupture and hemorrhage, as in hemoptysis, are perhaps always due to a diseased vessel. Notwithstanding the fact that the pulmonary capillaries have less extraneous support and are structurally most liable to rupture of any vessels in the entire vascular apparatus; yet, in the intensest engorgements to which as healthy vessels they are exposed in the first stage of acute croupous pneumonia. how rarely do we have a true hemorrhage Believing that hemorrhage in incipient phthisis is due, in the vast majority of cases, to vascular deterioration from bacillary invasion, we should take our suggestions in the treatment of such from this fact—if such it be—and place our patients under more favorable hygienic or dietetic conditions than they have previously enjoyed, else there is little hope for a permanent improvement or for the prevention of repetitions of the hemoptysis. To change of climate I may add change of occupation or habits, which will render the already diseased lung less vulnerable to bacillary invasion.

I recall for illustration a very marked and interesting case which occurred under my observation some years ago.

The patient was a man of about eighteen years who had about as extensive an inheritance of vulnerability as can be imagined. His uncles and aunts, of whom there were several, had all but one died of phthisis, and this one has since died of it after dragging along a semi-existence for some years. Both parents had died of phthisis. I cannot recall the history of the previous generation.

Frank was a tall, slender and frail boy, and was employed in the counting-house of one of the largest dry goods stores in Philadelphia. This counting-house, with glass sashes surrounding it, some of which were always closed, stood back in the store

and was lighted with several gas-jets the whole day through. In this deoxygenated den he had spent his working days for some months, when one day, about fifteen years ago, in the spring of the year, without warning, he had a hemorrhage of the lungs. The right apex was slightly infiltrated, and under rest the hemorrhage ceased after a few days. Under directions he quit his occupation, went to light work in the vineyard of an uncle who lived on a hillside bordering on one of the lakes in central New York. Returned in the autumn greatly invigorated, without objective or subjective sign of pulmonary disease, and by living an out-door life has never had a recurrence.

This is but one instance of many in the experience of, perhaps, all of us, where vulnerability has been changed to invulnerability by improvement of the environment.

To summarize the treatment I would say: Hygienic measures are adequate for the arrest of most cases of hemoptysis occurring early in chronic pulmonary disease. They constitute much the most important part in the treatment of even grave cases. In ordinary cases, in addition thereto, sufficient doses of an opiate to quiet unnecessary cough will be all that is required.

For the severer attacks, or where their repetition gives even a slight hemorrhage a gravity it would not otherwise possess, we should administer either the peculiar hemostatics, turpentine, erigeron, tincture laricis, or others of this class; or astringents, preferably gallic acid or acetate of lead, and these preferably by the stomach.

If topical applications are resorted to, they should be such as admit of perfect solution in the atomized fluids, as alum; or in the air inhaled, as turpentine, and forced efforts at inspiration with the idea of carrying into the lungs a large quantity of medicated air to mingle with the complemental and residual volumes are to be guarded against, lest the very effort to increase their efficiency shall increase the hemorrhage.

Where the hemorrhage is serious from its excess or persistence, ergot should be freely administered, by the stomach, if possible; hypodermatically if rapidity of action is imperative.

But in most, if not in all cases, hemoptysis should be considered due to bacillary invasion, and efforts to lessen the vulnerability of the patient should be resorted to and followed persistently.

MEDICAL PROGRESS.

The Treatment of Hip Disease.—Mr. Howard Marsh presents (*British Med. Journal*, August 3, 1889) the following conclusions in regard to hip disease when it is treated by continued rest, and without operative interference except the opening of abscesses as soon as discovered.

1. In the first place, the anticipation which would naturally be entertained that suppuration adds largely to the immediate danger of the case, and is injurious to the ultimate condition of the limb, is confirmed. In the stage at which cases are brought to the hospital suppuration is either already present, or it occurs after admission in about half of the total number of patients. In the previous report the proportion of suppurating cases was much higher (69 per cent.), and this decrease is a source of marked improvement in the general result.

In order to prevent suppuration it is of the highest importance that the disease should be recognized early, and be treated while it is still incipient. The more perfectly these conditions are fulfilled, the more limited will the proportion of suppurating cases become; and it is in this direction that the greatest improvement in the treatment and results of hip disease will, in the future, be attained. His own estimate, from what he has seen in the hospital and elsewhere, is that the formation of abscess may be averted by early treatment in at least 80 per cent. of the total number of cases.

2. In suppurating cases which recover, about 65 per cent. are good, and 35 per cent. moderate, cures. The average shortening is one inch; 50 per cent. are movable and 50 fixed; 65 per cent. walk well and 35 indifferently.

3. In cases without suppuration which get well 77 per cent. are good and 23 per cent. moderate recoveries; the average shortening amounts to two-thirds of an inch; 50 per cent are freely movable; 25 per cent. have slight movement, and 25 per cent. are fixed; 80 per cent. walk well and 20 per cent. indifferently.

4. The mortality due to the disease, as far as it can be ascertained in the cases he has reviewed, amounts to about 6 per cent., or if a wide margin be allowed for cases that may have ended fatally since they were lost sight of, although, when they were last seen, they were doing well, it may be safely said to be well under 10 per cent., while the mortality from general tubercular infection arising from the joint disease as a primary centre is well under 5 per cent.

A question that may naturally present itself is whether these figures are representative, or whether they are exceptional, and such as would not be confirmed were a larger number of instances taken into account.

He believes, from all he knows of the subject, that they may be accepted as typical; and he adds his conviction that the next group of a similar or larger number of cases that is published will show, not only as good, but still better results.

Now if we place the results of excision, so far as they have been recorded, side by side with the results of continued rest, he thinks there can be no doubt as to the conclusion at which we must arrive. Mr. Barker, last year, dwelt emphatically on the necessity of reducing the mortality attending tubercular joint disease; but the figures he quotes have reference to the mortality that follows excision. Thus, he gives Sach's table of 144 excisions of the knee, with 25 deaths (of which 13 were due to tuberculosis); Mr. Croft's 45 excisions of the hip with 18 deaths, 6 caused by tuberculosis; and Grosch's analysis of 120 excisions of the knee, with a mortality of 36.7 per cent., more than half of which depended on tuberculosis. The mortality here is undoubtedly so high that Mr. Barker's desire to reduce it is both natural and

praiseworthy. In Mr. Wright's cases, again, the mortality cannot be estimated at less than 20 per cent. On the other hand, in cases of suppuration treated without operation the mortality, he is confident, is not more than half this amount—that is, not more than 10 per cent. His strong impression is that it is materially less than this.

As to the ultimate condition of the limb, our information respecting the results of excision is limited. But, if we take Mr. Wright's table, we find that in less than 20 per cent. of his cases had the wound healed, while in 37 suppurating cases, treated without operation, and taken without selection, there were only 4 in which sinuses were still discharging; and in 65 per cent. the patients walked well and firmly, and without material lameness, on the limb. As to shortening, the average amount in 30 of Mr. Wright's cases was 1½ inch; in 35 cases treated without operation the average amount was 1 inch.

The treatment recommended is that of prolonged rest in the horizontal position combined with weight extension of the affected limb. This method, although of course it involves some important details, is, in principle, so simple and so well known that it is needless to describe it; but the method of dealing with suppuration claims more particular notice. All abscesses have been opened as soon as they were detected. An incision from an inch to an inch and a half in length is made, matter is evacuated by gentle pressure, and a small drainage tube, just long enough to enter the cavity, is used for two or three days. The dressing has consisted of carbolic gauze, next the wound, and this has been covered superficially with alembroth wool. The dressing is changed according to the case. In many instances the wound closes in a fortnight or three weeks, sometimes even sooner; in others it becomes a sinus, which discharges for a month or six weeks, and then heals; in others, again, suppuration remains free for several weeks, or even longer, and further openings have to be made; but at length, in a large majority of cases, the wound heals, and no further suppuration, except in a very few instances, takes place.

Sialagogue Mixture.—The following, which should be used as gargle, is claimed by DR. STICKER, in *Revue de Thér. méd.-Chir.*, June 1, 1889, to be a most efficacious sialagogue:

Rose water (distilled) . . .	f℥jx.
Tincture of capsicum } . . .	f℥jv.
Tincture of ginger }	
Powdered camphor	grs. xxxj.—M.

Treatment of Irido-cyclitis.—DR. SCÖLER, in addressing the Berlin Medical Society on the subject of irido-cyclitis, cited several cases in which he had obtained rapid cure by injections of a solution (one to two) of salicylate of soda into the vitreous humor of the eye. The amount injected was only one division of a Pravaz syringe. The result was most gratifying in every case. The hypopyon quickly disappeared in every case. In one case slight pain followed the injection; this, however, was only temporary. Injections of a two per cent. solution of carbolic acid were also tried in similar cases, but gave negative results.—*Deutsche med. Woch.*, June 20, 1889.

Tincture of Iodine a Cure for Warts.—DR. IMOSSI, of Gibraltar, has, according to the *Lyon Médical* of July 21st, been treating warts with internal doses of tincture of iodine. He has tested the efficacy of the treatment in ten cases, all of which resulted favorably. The dose given was ten drops of the tincture in half a glass of water, twice a day. Iodine thus used will cause a slight emaciation of the patient, which loss, however, will be regained as soon as the treatment is discontinued.

Amyloid Degeneration of the Pancreas.—At a recent meeting of the Kazan Medical Society, Dr. A. I. Podbelsky read an interesting paper (*Dnevnik Kazanskaho Obshtchestva Vratchei*, June and July, 1889, p. 2) on amyloid degeneration of the pancreas, in which he drew attention to the fact that the morbid lesion is by no means uncommon. Having lately made 122 consecutive necropsies (in 71 chronic and 51 acute affections), he found degeneration of the gland in 12 (9 83 per cent.). Among the cases were six men and six women, aged mostly from forty to fifty. Most frequently it accompanied tuberculosis (in 40 per cent. of all cases of the disease), and somewhat less so syphilis. Waxy degeneration of other organs was found in 25 out of the 122 cases. Macroscopically the gland was always more or less anæmic. In cases where the amyloid degeneration was well advanced, or where it was complicated with cirrhosis, the consistency of the gland was distinctly increased, while in the presence of but relatively slight waxy changes, combined with intense fatty degeneration, the organ was rather soft. Its weight was invariably found to be augmented in comparison with the standard. The same held good in regard to the dimensions of the viscus, except in two cases complicated with cirrhosis and atrophy. Under the microscope the degeneration was found to affect the walls of the arteries and periacinar capillaries, the membrana propria and fibres of the interlobular connective tissue. Fatty degeneration of the secretory cells and Renaut's *points folliculaires* was always present. Dr. Podbelsky believes that the disease may be diagnosed with probability during life, provided any new growths of the organ or obstruction of its duct can be excluded, from a chemical analysis of the patient's feces with regard to fats and starchy matters.—*British Med. Journal*, August 3, 1889.

Physical and Mental Changes after Removal of Ovaries or Uterus.—DR. GLÄVECKE, of Kiel, lately published a paper in the *Archiv f. Gynäkol.* on this subject. According to this author, the changes usually met with were those observed at the menopause. Menstruation permanently ceased immediately or shortly after the operation of removal in eighty-eight per cent. of the cases. In the remainder it was less frequent and more scanty. Practically no vicarious menstruation was observed. Menstrual molimina were observed in thirty per cent. In the time between the periods the familiar characteristic disturbances were observed—hot flushes, perspiration, and faintness. He looks upon them as disturbances of the vasomotor system, in consequence of the cessation of the ovarian function, an observation, by-the-by, that does not throw much light on the subject. He does not remark the very long continuance of this most uncomfortable condition in many of the cases—four and five years. In four cases out of a total of forty-three, palpitation and

headache came on, in one nausea, coming on several times a day, in another vomiting, in one diarrhœa, in one acne of the face lasting over a year, and in two increasing weakness of intellect. Atrophy of the internal genitals was a consequence of the operation. In twenty-three cases in which the operation was performed for myoma uteri, distinct shrinking took place in the tumors in ninety per cent. In forty-two per cent. of the cases a distinct increase in weight, due to deposit of fat, was observed. Sexual desire was unchanged after removal of ovaries in only a few women. Both desire and pleasure were much diminished, but not in the same proportion in all cases. As regarded the psychical condition, almost always a depressed, low-spirited condition was remarked. Many women became melancholic, others showed a changeable and petulant disposition. Actual psychoses developed in three cases; two recovered in the course of a year, the third was incurable.

The changes were different when the uterus was extirpated. Menstruation ceased, and no vicarious menstruation followed. Out of thirteen cases of total extirpation of the uterus strong molimina were observed in nine. If the ovaries were not removed atrophy of the external genitals did not take place. But little increase of weight took place after extirpation of the uterus. Sexual matters were almost unchanged, a slight diminution of sexual pleasure was acknowledged in a few cases. Psychically no change was observed in one-half of the cases; in more than a third a melancholy so great as to constitute a psychosis was observed. On the whole, the bodily and mental changes after castration were much greater than after extirpation of the uterus.—*Medical Press*, July 24, 1889.

Perspiring Feet.—In recent numbers of The News we have quoted several applications for fetid perspiration of the feet, last among which was a five per cent. solution of chromic acid, used in the German Army, and which has since proved successful in ninety-two per cent. of the cases upon which it was tried. The *Gazette des Hôpit.* of July 23d gives two additional formulæ, which are claimed to be most efficacious in overcoming this stubborn affection. Dr. Bardet gives one formula, which is as follows:

℞.—French chalk . . . . 40 parts.
Subnitrate of bismuth . . 45 "
Permanganate of potash . . 13 "
Salicylate of soda . . . 2 " —M.

This powder should be dusted daily into the stockings. The feet should be washed every morning and evening, and after washing, rubbed with alcohol.

The second method of treatment, which is recommended by Dr. Unna, is as follows:

℞.—Ichthyol . . . . . 5 parts.
Turpentine . . . . . 5 "
Zinc ointment . . . . 10 " —M.

This ointment should be applied after the feet have been bathed in water to which a little vinegar, mustard, or spirits of camphor has been added. During the day they may be dusted with the following:

℞.—Powdered mustard . . . 1 part.
French chalk . . . 30 parts.—M.

Two Cases of Antifebrin Poisoning.—The first case, reported in the *Münch. med. Wochenschrift*, No. 19, 1889, was that of a man, aged thirty-four, who fancied he had symptoms of fever, and procured from a druggist six antifebrin powders, of 15½ grains each. Returning home he took one powder every hour until five had been taken, beginning at 8.30 P.M., the total amount being seventy-seven grains. At four o'clock in the morning the patient was seized with violent diarrhœa. At about noon his appearance was as follows: Conjunctiva, lips and mucous membrane of mouth were blue; pulse small, but of normal frequence; heart normal. The urine gave aniline reaction. Extreme weakness, dizziness and chills; temperature 99° F.; evening, 101° F. Temperature on the following day, morning 95° F.; evening, 100° F. The diarrhœa persisted for several days, the stools being quite watery and of a grayish-black color. The patient suffered from loss of appetite, and recovered but slowly. In ten days he was able to be about again.

The second, which was reported in the *Wiener med. Presse*, No. 16, 1889, has the following history: The patient was a girl, who, to relieve an attack of hemicrania, had taken sixty-two grains of antifebrin. Immediately after taking the dose she experienced nausea, eructations, and later, pain in the region of the stomach and copious vomiting of a greenish watery fluid. These symptoms were followed by cyanosis, at first only of the lips, later of the entire face, hands and feet, whilst the skin of the body was pale and very cold. Pulse weak, almost imperceptible, but frequent, 140 pulsations to the minute; respirations shallow and rapid; the patient almost entirely unconscious. Later, symptoms of cerebral irritation manifested themselves; enlargement of the pupils, muscular twitchings of the face, gritting of teeth, rigidity of the extremities, and delirium. The patient then sank into a deep coma, from which she awoke in three hours.

Eight hours after the poisoning her senses fully returned, pulse eighty-four, and fairly strong; respirations normal, temperature somewhat sub-normal. Patient complained of pain in the stomach, and dizziness. Cyanosis disappeared in twenty-four hours. In two days the patient was able to leave her bed.

Treatment of Pruritical Affections with Menthol.—The analgesic properties of menthol render it valuable in diminishing the pain in pruritic affections, notably of senile pruritis, the pruritis of eczema, of itch, and also of urticaria.

For this purpose the drug may be either prescribed as a tincture, a liniment, or a salve.

I. Tincture or spirits of menthol:

℞.—Menthol . . . . . 1 to 3 parts.
Alcohol (at 104° F.) . . 50 to 60 " —M.

Sig.—For external application to the affected parts.

II. Menthol liniment:

℞.—Menthol . . . . . 3 parts.
Olive oil . . . . . 30 "
Lanolin . . . . . 30 " —M.

The action of this preparation is most efficient.

III. Menthol salve:

℞.—Menthol . . . . . grs. xxxix.
Balsam of Peru . . . f ʒjss.
Lanolin . . . . . ʒjv.—M.

In some severe cases the portion of menthol may be increased with benefit.—*Gazette hebd. de Méd. et de Chirur.*, June 21, 1889.

The Prognosis of Coryza in Young Children.—DR. J. SIMON, of Paris, recently writing upon the prognosis of coryza and laryngitis in young children, divides his observations under two heads: First, the prognosis of the above disease in infants, and, second, the prognosis in children above two years of age.

Acute coryza in infants always offers a grave prognosis. The accummulation of mucus in the nasal cavities causes difficulty in breathing, insomnia, and also a certain amount of fever. The prognosis is still more unfavorable if the disease takes a chronic form. The affection may become very intense and accompanied with fever and gastric troubles. Finally, it may also give rise to other serious troubles, and extend to the larynx and bronchi.

When occurring in children over two years of age, acute coryza is not so grave an affection, but still should be actively dealt with in order to prevent its encroachment on the larynx and bronchi. But at this age alimentation is accomplished with ease. Nevertheless, the disease may take a chronic form and give rise to osteoperiostitis, ozæna, tonsillitis, and even nasal polypi.

If in infants coryza takes a clearly acute form, it is always accompanied by more or less fever. In syphilitic cases, however, fever is absent, and there is a continuous running at the nose and a discharge of mucus in which, at times, traces of blood may be detected.

The prognosis of diphtheritic coryza is similar to that of diphtheria. Trousseau is of the opinion that laryngeal diphtheria is more fatal than the nasal form; but Simon considers either equally serious.—*Revue gén. de Clin. et de Thér.*, June 20, 1889.

Antipyrin in Sciatica.—In a stubborn case of sciatica, after all the usual remedies had been tried without avail (salicylic acid, iodide of potash, bromide of potash, quinine, etc.), DR. J. COVARRUBLAS, of Lima, determined to experiment with antipyrin. He accordingly prescribed doses of eight grains, three times daily. The pain disappeared entirely in one day, and ten days later the patient was able to leave the hospital, cured.—*Revista Médica de Chile.*

Treatment of Coryza.—Another "cure" for coryza is added to the already large list. We quote it from the *Centralb. für die Gesamt. Therap.*, No. 7, 1889:

Hydrochlorate of cocaine . . .	1 part.
Phenic acid	1 "
Menthol	1 "
Eugenol	2 parts.
Lanolin	15 " —M.

Sig.—To be applied to the mucous membrane of the nose by means of a cotton pellet.

The Value of Sulphonal in Mental Diseases.—After having experimented extensively with sulphonal upon a large number of cases of mental and nervous diseases, DR. GARNIER, in the *Deutsche med. Wochenschrift* of June 20th, comes to the following conclusions:

1. Sulphonal is a most valuable hypnotic in mental diseases. Sleep could be induced in nearly every case by doses varying from two to five grains.

2. Sulphonal proved itself of value in all cases where paraldehyde, urethan, and chloral were used without success.

3. Its tastelessness and odorlessness render it extremely applicable in mental cases, and the fact that it produces no injurious effects upon the heart, digestion, or respiration is an additional point in its favor.

4. Out of 100 cases, vomiting was observed in 5.50 per cent., and slight diarrhœa in 17.7 per cent. Such symptoms contraindicate the use of sulphonal.

5. The above symptoms are sometimes accompanied by dizziness and a staggering gait, similar to that produced by alcoholic intoxication; such should also contraindicate the use of the drug, particularly if any symptoms of congestion exist.

6. A diuretic action was observed to follow the use of the drug in 17.7 per cent. of the cases.

7. Single large doses do not have a soothing effect during the day, but produce sleepiness, and this indicates the advisability of decreasing the dose.

8. When sulphonal was given only every other night, the intervening nights were also observed to be spent in comparative rest.

9. In healthy subjects not suffering from any mental or nervous disorder, sulphonal induced a long and natural sleep. The accompanying symptoms were not noteworthy.

10. In females the action of the drug is more rapid than in males. In no case was the hypnotic action absent when the drug was given in single large doses; when the dose was divided, the results were but moderately good.

Treatment of Confluent Variola.—The following treatment of confluent variola, quoted from the *Rev. gén. de Clin. et de Thér.* of July 4th, is recommended by DR. BAUDOIN, of Mouy, France.

1. Apply, three times a day, the following salve to the face, neck, limbs, and body:

℞.—Salicylic acid	10 parts.
Vaseline	225 " —M.

2. After each application of the ointment, dust the entire body with the following powder:

℞.—French chalk	125 parts.
Salicylic acid	5 " —M.

3. Give, daily, three capsules of sulphate of quinine containing four grains each.

4. Gargles of borates will be found valuable.

5. Milk diet should be enforced.

The Infectiousness of Herpes.—Not long ago there was what might be called an epidemic of herpes in Dr. Unna's Hospital for Diseases of the Skin in Hamburg. All the cases occurred within five weeks, and in all five patients were affected. The primary case was one of herpes zoster on the chest of a man, three others had herpes labialis soon after, a fourth herpes facialis, and the fifth a herpes on the abdomen. DR. TÖRÖK, in the *Centralblatt f. med. Wissenschaft.* of July 27th, considers that this outbreak points strongly toward the infectiousness of herpes.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to The Medical News will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 Sansom Street,
Philadelphia.

SATURDAY, AUGUST 24, 1889.

THE TREATMENT OF FRACTURE OF THE PATELLA.

The recent history of the development of professional opinion concerning the methods of treatment of fracture of the patella is an illustration of the corresponding development which has taken place and is still going on in the entire field of operative surgery under the stimulus and the influence of the antiseptic theory of the treatment of wounds. Before that theory was introduced we possessed the knowledge of and habitually practised various non-operative methods of treatment of fracture of the patella which involved no risk to the life of the patient and discharged him with what was, in the great majority of cases, a thoroughly serviceable limb, although the broken fragments remained more or less widely separated and the union between them was fibrous and not bony.

Then came the antiseptic method with its promise of far greater freedom from the accidents and complications of open wounds. As experience was gained, confidence in the theory increased, the not infrequent disappointments were attributed to avoidable errors of technique, and the step to the far-reaching generalization that any operation that was anatomically possible was also justifiable and free from risk if properly executed, was easily taken by the enthusiastic disciple. With this came open arthrotomy of the knee and wiring of the fragments of the broken patella, an attempt to substitute an absolute *restitutio ad integrum*, a bony union without separation of the fragments, for the fibrous union with more or less separation.

Finally came the period of disillusion, the period of reverses and of promises fulfilled only in part. Granting that inflammation and suppuration are due to faults of technique, we have learned that those faults are not always avoidable, even by those who are most experienced and skilful. And at the knee we have learned that important functional defects after wiring of the patella are as frequent and as great as they are after non-operative treatment, and that, in addition, this operation has been followed in a considerable proportion of cases by suppuration of the joint, anchylosis, amputation of the thigh, and even death. But while this proportion of failures is large enough to justify the condemnation that has been set upon the employment of the operation in fresh, uncomplicated cases, yet it is still small enough to justify resort to it under exceptional circumstances, and to this extent it has become a valuable addition to our resources. It is, however, still necessary, as was shown in the recent discussion in the Philadelphia Academy of Surgery, to point out the dangers of the method and to check the tendency to undue expansion and generalization created by individual successes.

Meanwhile, under the protection of antiseptics other less radical and thorough-going operative procedures have been devised and the treatment of Malgaigne's hooks, now upward of half a century old, has won new favor. It must be admitted that treatment by splints and bandages alone, by means that do not act directly upon the fragments, does furnish from time to time a deplorable result, and that, as a rule, the failure is not recognized until after it has become too late to remedy it; consequently, the need for a more certain and trustworthy method exists. The problem is to bring the fragments together and to keep them together until a sufficiently firm union shall have taken place to render further external methods of retention unnecessary. The intervening curtain of fibrous tissue torn from the anterior surface of one of the fragments, with which the name of Macewen is associated (although it was previously noted by others) and to which so much importance is attached by some, is a bugbear. Such a curtain does undoubtedly exist in many cases, but its area is very much smaller than that of the fractured surface and it is not a bar either to bony union or to fibrous union of sufficient

strength and inextensibility. It does not, therefore, require or justify radical methods for its removal. So, too, with the presence of blood within the joint; its amount is seldom large, there is but little reason to think that it diminishes the subsequent freedom of motion of the joint, and if it should seem to require removal this can be done with an aspirator.

The methods in which the fragments are directly operated upon may be considered in two groups: those in which an external apparatus controls the fragments by means of metal pins passed through punctures in the skin to take a firm hold upon the bone; and those in which the fragments are temporarily or permanently bound together by metal or silk subcutaneous sutures, or subcutaneously transfixed by metal pins. Of the first, Malgaigne's hooks are the type, and the other members of the group are, indeed, only modifications of them. They are too well known to need more than a mention. Of the subcutaneous methods sufficient experience has not yet been gained to permit a final judgment of their availability. One of them, which has been quite extensively used during the past year by some of the New York surgeons, and which promises well, consists in passing a stout silk ligature through the tendon of the quadriceps and the ligamentum patellæ close to the bone and twice across the front of the fragments, through four punctures in the skin at the upper and lower corners of the bone, or through two transverse incisions, and drawing it snug and tying it while the fragments are held together with the fingers or tenacula. This was referred to in the discussion above mentioned as Volkmann's method, but incorrectly, for Volkmann's method was to pass two silk ligatures transversely, one through the tendon, the other through the ligamentum, tie each in a loose loop over the skin, and then to draw the loops together (and thereby the fragments) by an external cord. The difference may not be deemed radical, but the chance of suppuration seems to be less in the completely subcutaneous method, and it gives opportunity for an earlier employment of massage.

A somewhat similar method, but one requiring a larger armamentarium and offering greater operative difficulties is that of Ceci, an Italian surgeon, who brings the fragments together with the fingers, drills them diagonally from one lower to the opposite upper corner, draws a silver wire through, passes it under the skin to the other lower corner, drills the bone again on the other diagonal, and draws the wire through it and then under the skin across to be twisted with its other end. Dr. T. G. Morton passed the drills along the two diagonals and held the fragments together by clamps placed on the projecting ends of the drills.

To summarize, then, we may say that the old method of immobilization of the joint upon a posterior splint with retention of coaptated fragments by bandages will furnish a large percentage of successful results, and is to be employed in default of special instruments, or of the opportunity to carry out operative methods with the necessary protection; but it requires that the fragments should be left uncovered for frequent examination in order that subsequent separation may be promptly detected and remedied.

Malgaigne's hooks, in any of their modified forms, accomplish their object with much certainty and freedom from risk, but occasionally troublesome suppuration occurs.

The various subcutaneous methods hold out a fair promise of both efficiency and freedom from risk, with the advantage that the patient needs close supervision for only a few days, or until the punctures in the skin shall have healed. He can then be dismissed with a plaster splint, to be worn for a month, with no anxiety lest the adjustment of the fragments should be disturbed.

The operation of opening the joint and wiring the fragments should be used only under exceptional circumstances.

POISONOUS TEXTILE FABRICS.

THE occurrence of eruptions in those wearing colored fabrics next the skin is not rare, but our knowledge of the substances most likely to produce such poisoning is not exact. Arsenic in various combinations frequently produces marked irritation. At a recent meeting of the Berlin Medical Society, WEYL (*Münchener med. Wochenschrift*, No. 23, 1889), in a paper upon this subject, considered dye-stuffs not so poisonous as the mordants by which they are applied to the fabric. Among the few carefully analyzed cases of such poisoning which he had collected, he found an epidemic of lead poisoning among workers in yarns at Lyons who used lead chromate in a yellow dye. Saddlers use thread similarly colored. In another instance, a tricot material was found to be colored yellow with saffranin; this dye was intensely poisonous to animals by subcutaneous injection, although harmless

when swallowed. Eosin produces an eruption when used as a dye, but is not poisonous. In a case of poisoning ascribed to material dyed with indigo, an excess of sulphuric acid was found the active agent. Indigo itself is innocuous.

In the discussion following, pityriasis rosacea was reported to have followed the wearing of tricot materials; chrysoidin, a yellow powder, was also observed to cause severe irritation among workmen who used it in dyeing. A certain allowance must be made in such cases for individual susceptibility, for as persons vary in the irritation produced by articles of diet, so they differ in susceptibility to irritants in clothing.

In prophylaxis the rule should be made that no colored article should be worn next the skin which has not first been boiled. This simple precaution is usually sufficient to prevent poisoning by poisonous fabrics.

We are in receipt of a formal announcement from Professors von Bergmann, Virchow, and Waldeyer, that according to the resolution passed at the Washington meeting, September 9, 1887, the Tenth International Medical Congress will be held in Berlin. The Congress will be opened on the fourth and closed on the ninth day of August, 1890. Detailed information as to the order of proceedings will be issued after the meeting of the delegates of the German medical faculties and medical societies at Heidelberg, on the 17th of September in the current year. Meanwhile they extend a cordial invitation to attend the Congress. An office has been established at Karlstrasse 19, Berlin.

The fourth session of the French Congress of Surgery will be held in Paris, from the 14th to the 20th of October of this year, Baron Larrey presiding.

The following subjects will be brought forward for discussion:

1. The immediate and remote results of practical operations for local tuberculosis.
2. The surgical treatment of peritonitis.
3. Treatment of aneurisms of the limbs.

The American Pediatric Society, which was organized at Washington last autumn, will hold its annual meeting at the Army Medical Museum building, Washington, D. C., on the 20th and 21st of September, under the presidency of Dr. Jacobi. The preliminary programme has just been issued, and includes papers by Blackader, of Montreal; Booker, Latimer, and Osler, of Baltimore; Jacobi, Dillon Brown, Caillé, Fruitnight, Huber, Koplik, Northrup, O'Dwyer, Seibert, Lewis Smith, and Vineberg, of New York; Earle, of Chicago; Jeffries, of Boston; Love, of St. Louis; Meigs, of Philadelphia, and Vaughan, of Ann Arbor.

We are informed that Dr. J. R. Taylor, of Phillipsburg, Pa., has been elected to the chair of Pathology and Practice of Medicine in the Medical College of South Carolina.

The U. S. Grant University has organized a medical school, with a complete faculty, at Chattanooga, and the winter course opens on October 7th.

An ancient treatise on anatomy has been unearthed at the Royal Library at Berlin. It was written in Latin in 1304, by Henry de Mondeville, professor of surgery at Paris and Montpelier, and body-surgeon to Philip le Bel. Surgeon de Mondeville was at one time on English soil as an army surgeon, and his death took place in 1318. The book has never been printed. It is valuable as throwing light upon a period, concerning whose medical history there is but little known.

The Baly Memorial of the Royal College of Physicians has been awarded to Dr. Heidenhain, of Dresden. It consists of a gold medal, and is issued every second year for some noteworthy accomplishment in physiology. Bernard, Darwin, Brown-Séquard, and Ferrier have been among those who have received the Baly medal.

Dr. Harvey E. Brown, Major and Surgeon, U. S. Army, died of consumption last Tuesday at Jackson Barracks, near New Orleans, and was buried at the National Cemetery at Chalmette on Thursday. He was a son of Col. Harvey Brown of the Fifth Artillery. Graduating at the University of New York, he entered the army as Surgeon in General Sickles's Excelsior Brigade (Seventeenth New York) in 1861 and rendered notable service. He saw considerable service during the yellow-fever epidemics in the South during the past twenty-five years. He was the author of a report on a "More Efficient System of Quarantine on the Southern and Gulf Coasts" (1872) and of a history of "The Medical Department of the United States Army from 1775 to 1873" (1873).

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, June 3, 1889.

J. EWING MEARS, M.D., IN THE CHAIR.

(Concluded from page 191.)

DR. F. H. GROSS reported a case of

FRACTURE OF THE PATELLA TREATED BY MALGAIGNE'S HOOKS

in the German Hospital. About three months ago the patient fell and fractured the right patella. He was admitted to one of the hospitals in this city and treated by hard pads above and below the patella. After remaining in the institution four weeks he left and began walking about. At this time there was separation wide enough to receive his finger. After going about for a week he fell and severed the ligamentous union. He was then admitted to the German Hospital, and as soon as the swelling subsided a modified form of Malgaigne's hooks were applied. This was April 27th. The hooks were allowed to remain in position three weeks, and it is now three weeks since they were removed. The union is very close, but whether it is bony he could not say.

This is the second case in which he had used this instrument. He saw the first case some months after he left his care, and the union seemed to be bony. The result was very good.

Where the hooks are secured together by a screw, the screw is apt to become rusted, and in removing it a portion of the bone may be chipped off. He has modified the instrument by having the upper and lower pairs of the hooks slide together. On the upper surface of each is a projection, by means of which they can be secured together, first by thread and then by a strong rubber-cord. This tends to keep up a steady and continuous traction, so that anything between the fragments of the patella will be subjected to constant pressure or forced out. Each section of the instrument is furnished with a removable handle, by means of which it can be conveniently held and applied. In fixing the hooks he drives them well into the bone.

DR. THOMAS G. MORTON said that the usual method used in treating fractures of the patella by compressing all the tissues about the knee-joint interferes materially with the circulation, and undoubtedly tends to want of bone union, which is not the case when the fragments are held together by hooks, pins, or by suture. The Malgaigne hooks he had often used, and only in one instance was he obliged to remove them on account of irritation produced. He has also used a long steel pin for retaining fragments in position. Now, with perfect antiseptic precaution, the joint can be opened, the fragments approximated by suture with little danger and with fair prospect of bone union.

DR. J. M. BARTON said that Macewen states that where the patella is broken by muscular action the overlying tissues are stretched and ruptured and fall in between the fragments preventing bony union, and nothing less than opening the joint and removing these tissues will permit bony union. When the fracture is due to direct violence, of course, these tissues are not stretched and ruptured, and do not prevent bony union. When, however, the fracture is due to muscular violence and the fragments are not widely separated, it is possible that the overlying tissues are stretched but not ruptured, and bony union may perhaps be obtained without any operation. The existence of soft tissues between the fragments might be determined by the amount of crepitation obtained on rubbing them together. He had opened the joint and wired the fragments in two cases. In the first case the patella was broken into three pieces by muscular violence. It occurred while the patient, a heavy man, was jumping off a moving car; before he fell to the ground he felt the fracture. He stated that he felt two distinct snaps. Owing to the complicated manner in which the speaker was obliged to pass the wire he felt that he would not be able to remove it, so he cut the ends short and buried them in the patella. The man made a perfect recovery from the operation; there is bony union, but he has a very limited motion at the joint. In the second case the line of fracture was straight across and was also due to muscular action. This case was treated at the Jefferson Hospital about three months ago. He removed the wire six weeks after he inserted it. He also has good bony union and is already able to bend the leg nearly to a right angle. In neither case was there any danger to life. In both he was able to verify the statement of Macewen that there was a layer of tissue between the fragment. It lays over each rough broken surface and is closely adherent to it; it can be raised up, but when released it falls back into position. In the first case the layer over each surface of bone was at least one-eighth of an inch thick. He trimmed them carefully off with scissors after they were raised.

DR. CHARLES B. NANCREDE said that there is one point in regard to the anatomy of the knee-joint to which Hamilton has called particular attention, and which explains the stretching. The patella is attached to the tibia not only by the tendon of the rectus which, passing downward, forms the ligamentum patellæ, but also by the expanded tendons of the two vasti which are extended downward and attached to the epiphyseal line of the tibia. He states positively—and Dr. Nancrede thought that his observations confirm the statement—that if at the time of the injury there is an inch separation, due to a tearing of an inch of this fibrous hood of the quadriceps, there will be an inch of separation when the patient has used the limb for, say, a year. If there is two inches original separation there will be the same amount when the patient gets well, unless bony union is secured. There will be no separation unless the fibrous hood of the quadriceps tendon is torn, and the extent of the separation will be in proportion to the extent of this tearing.

He recently had an interesting case which was sent up from the dispensary, confirming these statements. The man stated that he had injured the patella about a week previously, since when he had pain in walking. There was a transverse fracture readily made out. There had been no tear of this fibrous hood, and there was no separation of the fragments. By rubbing the two fragments forcibly together in a lateral direction distinct bony crepitus was elicited, and the finger-nail could follow the transverse fissure across the whole extent of the bone. These peculiar points were readily detected by his interne and by one of his colleagues.

DR. WILLIAM G. PORTER desired to hear the experience of the Fellows in regard to the result in these cases

where there is considerable separation, and what amount of motion is recovered eventually. It had been his fortune to see one or two cases in which the result was unusually good, but, of course, we do not often have the opportunity of following these cases to their termination. Some years ago he had a case at the Dispensary of St. Mary's Hospital where the separation was sufficient to admit three fingers. The patient came with a leg ulcer, not to be treated for the knee trouble. He seemed to have as good motion in the one knee as in the other and he said that the limb was just as useful as the uninjured one. He had seen a similar case at the Philadelphia Hospital. He did not know whether or not this was an isolated experience.

Dr. J. Ewing Mears had been much interested in this subject during the past year, and had asked himself whether it would be well to change the nomenclature in these cases and speak of them as rupture of the tendon of the quadriceps extensor femoris with fracture of the patella. There may be a rupture below, or it may occur above, or it may take place through the patella. He thought in these cases we should regard the tendon rather than the bone. The fracture of the bone is incidental. In these cases where the injury is the result of muscular action, the tendon is the part to which attention should be devoted. If we suture the tendon and keep the limb quiet we shall secure as good union as by any plan the object of which is the consolidation of the bone. The rupture of the tendon is the important element. Where the fracture is the result of direct violence there is no separation because the tendon is not stretched or ruptured. Rupture of the tendon, with or without fracture of the small bone which it encloses, should be treated in the same manner as rupture of a tendon in any other part of the body—by careful suturing and prolonged rest until a firm union occurs. The occurrence of *complete* rupture of the tendon with fracture of the bone as the result of muscular action is very rare, if indeed it ever takes place, and the recurrence of separation of the fragments after treatment in many cases is due to the incomplete and imperfect adhesions which have formed between the foldings of the elongated and partially ruptured fibres of the tendon. As soon as the limb resumes its function these adhesions break, the tendon unfolds partially or completely, causing separation of the fragments of the bone which is part of the tendon.

The proper treatment would seem to be exposure of the tendon by an incision, retrenchment, and accurate apposition of the edges of sutures, by means of which the fragments of the patella will necessarily be brought into apposition and osseous union occur. In place of this operation, which is not entirely devoid of danger, the method of Volkmann may be employed, which consists in passing a silver wire or a strong silk ligature subcutaneously though the tendon of the extensor muscles, and the ligament of the patella by which procedure he has obtained excellent osseous union in a number of cases. In all cases prolonged quiet of the limb is most important, use being prohibited for at least a period of three months.

Dr. J. M. Barton: In reference to the question of Dr. Porter, I would say that the cases he had seen had been very unfortunate. He had certainly met with eight or ten cases in which the other patella was broken, and in at least three the same patella has been rebroken.

When the fracture is treated in the usual manner, without opening the joint or wiring the bones, we obtain tendinous union, all that Dr. Mears claims, and this tendinous junction stretches and occasionally breaks. The point which had been made in regard to the tendon is a good one. If we cut down to suture the tendon, we should not neglect to wire the bone. The risk would be as great, the joint is quite as much exposed in suturing the tendon as in wiring the bone. Suture of the tendon will not be sufficient, though it might be done at the same time.

One case had been under the care of a colleague; the patient broke his patella, and two years later broke the bone of the other side. About six months later he refractured the first patella. A short time later he broke not only the ligament of the same patella, but also ruptured the skin over it, making a compound dislocation of the joint. The fragments of bone were a long distance apart, and the remaining ligament was so trifling in amount that it would evidently be useless if sutured. It was decided on consultation to excise and make a stiff joint.

Dr. F. H. Gross said that there was a case in the marine department of the German Hospital under treatment for some medical trouble, who had had a separation of the ligament of the patella. This bone was some distance above the joint, and the condyles of the femur could be felt below it. He had, however, good use of the limb. It was clearly shown that its usefulness was dependent upon the accessory tendons from the vasti muscles. When he raised the limb these tendons came out very distinctly.

Dr. William Hunt did not wish to say anything against reasonable efforts to obtain the best possible results, but whilst listening to this discussion it was impossible for him to recall a single case in which any permanent serious disability had arisen from fracture of the patella. No matter how great was the separation, good functional result was secured, and the patients have been able to go about and attend to their business. With such an experience he could not justify what appeared to him to be rash operative measures in treating single fractures of the patella. He had recently read of three deaths from opening the knee-joint, washing out, and wiring. Again, he had watched cases thus treated by others. The results have been no better than those obtained by the old and safe methods. Have we, therefore, he asked, a moral right to risk life when there is no occasion for doing it?

Dr. Nancrede had seen one case in which there was a separation of several inches, with an admirable functional result. He recalled another case in which the patient fell and broke the ligamentous union between the two fragments of a broken patella. It would have been impossible to wire the fragments together without dividing the quadriceps tendon freely. He did the best that he could, but the result was very poor. Hamilton in his work on *Fractures of the Patella*, reporting one hundred and twenty-three cases, states that ligamentous union is as good as bony union even if this can be attained. This statement was made before the time when the fragments had been wired together sufficiently long to judge of the risks and advantages. He cites case after case in which there was great separation, but in which the functional result was good in support

of his view. The speaker had used the modified Malgaigne's hooks where there is any tendency to separation. In any case where he operates by incision and wiring he should suture the tendon as Dr. Mears suggests.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPÆDIC SURGERY.

A. B. JUDSON, M.D., CHAIRMAN.

Stated Meeting, March 15, 1889.

CICATRICIAL CONTRACTION OF FINGERS.

DR. A. M. PHELPS presented a patient on whom he had operated four weeks ago for restoration of motion to the fingers, which had been flexed in the palm by a cicatrix in the wrist of eight years' standing. He had freed each tendon from the cicatricial tissue and had secured healing by blood-clot, with the hope that new sheaths would be formed in the clot. The wound was dressed antiseptically, and the first dressing was changed at the end of three weeks. The prospect of recovery of motion was good.

DR. R. H. SAYRE said that Paget had long ago recognized the organization of blood-clot after subcutaneous tenotomy. The case presented by Dr. Phelps shows that advantage can be taken of it after open incision under antisepsis.

DR. N. M. SHAFFER presented a patient, a girl of twelve years, who had been affected for ten weeks with

HYSTERICAL EQUINO-VARUS

and rhythmical movement of the left foot. The talipes was reducible manually, but the motions were persistent. There was inability to walk, the result of the disability of the quadriceps extensor group. Before coming under Dr. Shaffer's observation plaster-of-Paris had been applied to the limb for several weeks, but without benefit.

DR. A. B. JUDSON thought that choreic elements were seen when the patient attempted to walk. He recalled a case of rhythmical myoclonus reported by Dr. Peckham in the *Archives of Medicine* in 1883, in which the patient had been subjected to a great variety of treatment, and finally recovered after the hypodermatic use of atropine.

DR. S. KETCH suggested treatment by hypnotism.

DR. R. H. SAYRE thought that the case illustrated the fact that abnormal muscular contraction can produce degrees of deformity as marked as those caused by bony distortion.

DR. L. W. HUBBARD thought the case allied to chorea, being the result of nerve irritation or exhaustion. He suggested absolute rest or recumbency for a long period with efforts to improve the nutrition.

DR. A. S. HUNTER had treated with success a case of hysterical hip by the administration of ignatia amara. The use of this drug in a number of cases of this kind had led him to value it highly when the disturbance was limited to groups of muscles only; but he thought it was of little value in the treatment of general choreic conditions.

DR. V. P. GIBNEY had had a favorable effect in a case of rotary spasm of the neck, from the fluid extract of gelsemium, given in five-minim doses, and pushed almost to toxic effects.

DR. H. W. BERG said that the contractions in the case shown could not be due to nerve lesion because it yielded so readily to manual replacement. Where there is irritation of motor nerves as in spastic paralysis, it is extremely difficult to reduce the limb to a proper position. He suggested the ordinary treatment of chorea with electricity to make an impression on the mind rather than on the nerves.

DR. PHELPS then read a paper on

THE MANAGEMENT OF HIP-JOINT DISEASE FROM AN ANATOMICAL BASIS.

In regard to the pathology of hip disease, Dr. Phelps believes that it is a local tubercular affection, due to accidental inoculation and not to a constitutional or strumous condition. Following Volkmann, Albert, and Konig, he believes that the inflammation, at first simple, becomes tubercular by inoculation, and then purulent. The irritation of the peripheral extremities of the nerves in or about the joint produces muscular spasm, which in turn distorts the joint by trauma, aided by the bacilli of tuberculosis.

In regard to treatment, he relies on mechanical treatment, believing that if we immobilize a joint and remove the intra-articular pressure, Nature will take care of the tuberculous material. His experiments on dogs had convinced him that immobilization of healthy joints does not produce ankylosis. Encouraging motion in an inflamed joint is a violation of the surgical law that an inflamed part requires rest. He believes that the muscular spasm, which is a most serious element of destruction, should be overcome by extension, and that while extension is necessary to secure immobilization, it is not sufficient by itself. He, therefore, resorts to a combination of extension and fixation; the extension always to be in a line corresponding to the axis of the neck of the femur.

Treatment as a rule should be begun in bed, extension being made in two directions, *i.e.*, toward the foot-board and laterally, the body and well leg being fixed to a long splint extending to the axilla. If the deformity does not yield to extension properly applied, the tissues at fault should be divided subcutaneously or by open incision. Abscesses are to be incised through their entire length, and thoroughly scooped out and washed, strict antiseptic precautions being observed.

Distention of the capsule should be relieved by aspiration or incision; then traction will not produce pain.

He exhibited a patient in a portable bed, which is an ingenious substitute for the wire cuirass, made with a board cut in an outline of the body and plaster-of-Paris. The child is laid on the board, and then the whole enveloped with plaster-of-Paris bandages from the foot to the axilla. The plaster is then cut away in front, the interior comfortably padded, and the patient held in place by lacings or bandages. Extension and fixation in bed are to be continued until the active symptoms and the deformity have entirely disappeared, and the spasm of the muscles is no longer present. Adults are then given crutches, and a portable splint which has a perineal crutch, extension by adhesive plaster, an abduction bar, and an upper (thoracic) ring to prevent flexion and extension at the hip. Children, after treatment in bed, are to have the portable bed, and then the portable splint, with or without the high shoe and crutches.

DR. J. RIDLON was much pleased to hear the author

of the paper take the ground that hip cases should be cured without deformity. He recalled a case of a patient in whom the muscular spasm had been relieved by pinching the muscle. The child was very thin, and it was found that when the adductors were separated from the other muscles and the belly of the muscle was pinched without any attempt at fixation, there was as much relief as could have been afforded by lateral traction.

Dr. Shaffer said that the paper had suggested to him the importance of separating in our minds the disease from the deformity. It is a question how far we are justified in meddling with the deformity, which is simply an expression or, so to speak, a symptom of the disease. In his experience attempts at speedy reduction of the deformity had been followed by disastrous results. Nature gives a very positive indication in the acquired position of the thigh—that in which the immobilization of Nature reaches its maximum, and the diseased parts receive the greatest relief from reflex muscular spasm. If we forcibly interfere with this effort on the part of Nature, we inflict a distinct traumatism.

On the threshold of treatment the important question is, not whether traction is to be made in the line of the shaft or the neck, but how to secure an artificial immobilization in the position Nature assumes as the one that affords the most protection to the inflamed parts. He believed that if the joint were protected from traumatism—in other words, if traumatic contact of the inflamed joint surfaces is removed, and this can readily be done by the use of portative apparatus without entailing immobilization of the entire body from the head down—the joint is placed in the best known local condition.

The portative traction treatment is compatible with fresh air, sunlight, and moderate exercise, which are the best means of combating the tubercular disease and the tubercular diathesis. More lives have been saved and better results have been thus secured, than by any other method which has been thoroughly tested.

Dr. R. H. Sayre agreed with Dr. Shaffer as to the importance of maintaining the general health, and the inadvisability of general immobilization of the body, if the diseased joint could be controlled without it. He thought that complete immobilization of the hip-joint in young children was very difficult to secure; and that the movement that stopped short of producing muscular spasm and pain was not harmful. For poor children particularly, he thought the portable bed was an admirable contrivance. The relief obtained in some cases by pinching the muscle could be explained on the supposition that it stopped the reflex action of the muscle. It is known that firm constriction of the belly of a muscle will, in certain cases, abolish spasm.

Dr. Charles L. Scudder, of Boston, advocated a more frequent resort to the results of experiment on the cadaver. He recalled Dr. Bradford's experiments made in 1880, in which it was found that in an adult a force of one hundred pounds was not sufficient to separate the head of the femur from the socket; while in the shallow and yet not completely ossified acetabulum of a young child, a moderate force causes separation, and less force was required in the fœtus. Dr. Scudder believed that in hip disease of children, a tractive force of from three to five pounds would separate the joint surfaces, as was illustrated at the Children's Hospital in Boston in the case of a young boy who had hip disease and night cries. The joint cavity was opened and a small quantity of pus evacuated. While the boy was under ether, it was found that traction made with the hand separated the joint surfaces to such an extent that the finger could be placed between the head and the acetabulum.

Dr. Hubbard thought that no one at the present time held the opinion that ankylosis is caused by immobilizing the joint affected with chronic inflammation. He had found it difficult to get ankylosis in cases where it was desirable, as in disease of the knee. The first object is to give rest to the joint, which is best done by traction; not to separate the surfaces, but to overcome articular pressure which leads to muscular spasm. He believed the long hip splint gave sufficient immobilization for all practical purposes. It is more easily managed than the portable bed of Dr. Phelps, which from neglect would be likely to cause excoriations. As the disease seems to be a struggle between the tubercle bacilli and the vitality of the organism, he thought it especially important to place the system in the best possible condition to resist attack. He had rarely seen constitutional disturbance from abscesses which had been let alone, although, in exceptional cases, acute and painful conditions are certainly greatly relieved by surgical interference.

Dr. Judson commended the title of the paper. It was an admission that hip disease is not to be cured by treatment, but so managed that the almost inevitable recovery by natural processes should be with the minimum of disability and deformity. He thought that more emphasis should be placed on the importance of protecting the joint from the traumatisms of standing and walking, as is done by the use of Hutchinson's extra long crutches and high sole on the well foot. But in every case there are long periods of exemption from pain, when this simple apparatus will be discarded. The ischiatic or perineal crutch of the hip splint, however, cannot be wilfully discarded; and when it is seen that the rack and pinion not only furnish traction, but also a convenient means of adjusting the length of the upright, the hip splint appears to come very near perfection as an instrument for the management of hip disease. He had never recognized either the trauma said to be caused by reflex muscular contraction or the alleged mechanical counter-action of the muscles by traction. He believed, and had always held, that the hip splint mitigates reflex muscular contraction by allaying the inflammation which gives rise to it. This it does by arrest of motion and prevention of pressure; motion being arrested by traction brought about by the use of the key, and pressure being averted by the perineal or ischiatic crutch, which makes the limb a pendent member. As the inflammation is resolved the reflex muscular contraction ceases.

The last annual report of one of our orthopædic institutions contains a table, from which it appears that there have been under treatment 371 cases of disease in the hip; 6 in the shoulder; 85 in the knee; 3 in the elbow; 27 in the ankle; and 5 in the wrist; an aggregate of 483 in the lower, and 14 in the upper extremity. Shall we draw the inference that the incipient osteitic focus is found only or chiefly in the cancellous tissue of the lower extremity, or that a focus in the upper extremity more readily undergoes resolution by reason of its comparative exemption from violence? If the latter view is correct, it follows that the limb is to be made a pendent member

by the persistent use of the axillary or ischiatic crutch at the earliest recognition of the disease. In some cases, an early diagnosis may be facilitated by the following simple method: Let the patient sit on a table with the legs hanging and the knees separated; in this position, swinging the leg laterally is possible only with rotation of the femur; and if one leg oscillates in a less arc than the other, it induces or confirms a suspicion of the integrity of the joint.

He did not believe in treating abscesses and sinuses excepting indirectly through the general and local management of the bone disease in which they have their origin.

DR. GIBNEY was in favor of securing absolute immobilization, but sometimes he would rather have less perfect immobilization, if by so doing he could secure a change of air and climate, with the consequent improvement in the general nutrition. Ordinary hip disease is managed satisfactorily by the portable traction splint, with or without the rack and pinion; and he had been agreeably surprised with the facility with which these patients ran around in the tenement houses. They come to his clinic only every three or four weeks for adjustment of the apparatus; and during these intervals engage in the most active sports; they certainly do not lie in bed in dark rooms and die of pyæmia. It is unsafe to put these children in an appliance like a cuirass or the portable bed, unless one is certain of being able to see and attend to them at short intervals. It had been his lot to see cases in which he had been unable at times to obtain proper coöperation on the part of the patient's family. He had often seen abscesses burrowing up to the spinal column and down to the knee; and such cases seemed to baffle even attempts at surgical interference. We must be guided a good deal by circumstances, and if we can protect the hips from trauma and give the patient the benefit of out-door exercise, abscesses will generally be insignificant. He believed in correcting the deformity speedily, if necessary by dividing tendons and bone under an anæsthetic; for by so doing we save much time and lose nothing.

In regard to aspirating the joint over-distended with fluid, it was almost impossible to diagnosticate an over-distended hip-joint. The position of the limb does not depend on the quantity of fluid in the joint, but it is due to reflex spasm, and the efforts made by the child and nature to secure fixation.

DR. J. H. GIRDNER described an experiment on the cadaver in which great force was applied without separating the surfaces of the hip-joint. He also cited a case in which it had been necessary to keep the hand applied to the face for nine weeks in the course of a plastic operation on the nose. At the end of this time, there was no limitation in the motions of the elbow and the wrist.

DR. KETCH believed that hip disease is so often characterized by exacerbations that all attempts at a division into stages are of no practical value. He thought that the hip splint could be often of use for the reduction of deformities even in those periods when the patient is confined to his bed. In general, he believed it was a great mistake to make use of any apparatus which can be entirely left to the care of the patient or family for long periods. The explanation of the relief of pain by compression of muscles was to be found in an involuntary action on the part of the patient which secures fixation and traction at the same time.

DR. BERG, speaking from the standpoint of the general practitioner, who frequently saw children in the very beginning of hip disease, related the histories of three cases which had presented the symptoms of early hip-joint disease and yet recovered perfectly after rest in bed for a few weeks. He now insisted on all such patients remaining in bed for several weeks before commencing any other treatment.

DR. PHELPS, in closing the discussion, said that many cases in tenement houses, whether treated by the long traction splint or by the portable bed, are deplorably neglected; but this does not argue against the use of either apparatus; it simply illustrated one of the difficulties with which all practitioners have to contend. He valued the portable bed because he desired immobilization of the affected joint, and this could not be obtained with splints having joints in them, and not including the trunk. He could relieve his patients better in bed during the period of deformity, and so adopted this method of treatment. He had seen patients in England who had been in bed several years, and were still in excellent health. He did not, however, advocate prolonged bed treatment. Believing that the cases in question are inoculations of the bacillus tuberculosis on a previously inflamed surface, and not instances of constitutional tuberculosis, he explained the frequency of tubercular joint disease in the lower extremity, by the statement that the joints of the lower extremities being more subjected to traumatic inflammation, furnish good ground in which the bacillus of tuberculosis could more readily reproduce itself.

He had presented his honest convictions, and hoped to report his cases later in such a way that others could disprove his statements, or he could substantiate his views.

THIRD CONGRESS OF THE GERMAN SOCIETY OF GYNECOLOGY.

Held at Freiburg, June 12, 13, and 14, 1889.

(Specially reported for THE MEDICAL NEWS.)

(Concluded from page 190.)

ABSCESS OF THE PELVIS.

DR. WIEDOW said that in extra-peritoneal abscesses, one always meets with fluctuation which is not found in abscesses of the peritoneal cavity. From a clinical point of view, these patients have fever, and a fever with remissions as in pyæmia; they are anæmic, and suffer alternatively from constipation or diarrhœa. The abscess may burst and evacuate itself into the peritoneum, and prove rapidly fatal. The opening of such abscesses externally is generally followed by fistulæ. He thought these abscesses ought to be operated upon as soon as the diagnosis is made. Three kinds of abscess exist: the subcutaneous and submucous abscesses, the deep abscesses, and the fistulous abscesses. In the first class of abscesses, an incision followed by drainage is the only procedure required. The deep abscesses which can be easily reached, can be opened directly and drained by the vagina, such as an abscess of the peritoneal cavity. If we have to deal with a deep abscess that cannot be reached by the ischio-rectal fossa, or if situated

near the rectum, he thought it more advantageous to make, according to Hegar's method, a plastic resection of the sacrum. The skin is first incised in a V shape, then the sacrum is freed from its attachments and sawed through to the peritoneum of the posterior surface; this flap is then lifted and one can easily reach the abscess, which can be drained and easily irrigated; on a level with the Fallopian ligament, the peritoneum must be detached before the abscess is emptied.

DR. ELISCHER had observed on several occasions, that when abscesses of the pelvis were not opened early an amyloid degeneration of the kidneys followed; hence, he believed these abscesses ought to be evacuated as early as convenient.

DR. HIRSCHBERG, of Frankfort-on-the-Main, in a case of tumor of the pelvis which could not be reached by the vagina, made an examination of the patient under chloroform and found a fluctuating tumor; the tumor was punctured through the rectum and about ten ounces of pus were obtained. The tumor having returned to its original form, he made a new puncture; then, by means of the polyp forceps, he introduced a drainage-tube which was left in position for two or three days, and the patient was cured.

DR. WIEDOW thought it dangerous to puncture an abscess through the rectum, as one could not know how far the upper wall of the abscess reaches, and pus could be introduced in this manner into the peritoneal cavity.

ON THE ULTIMATE RESULTS OF EXTIRPATION OF THE UTERUS.

DR. MUNCHMEYER, of Dresden, said that at the obstetrical clinic of Dresden, from 1883 to 1889, there had been performed 110 extirpations of the uterus, of which 80 were for carcinoma and 30 for other diseases. Out of the 80 operated on for carcinoma 4 died from the immediate effect of the operation—that is, 5 per cent.; 1 died from strangulated hernia, 2 from septicæmia, and 1 from peritonitis. Out of these 80 operated upon, 10 died from a recurrence of the disease, 4 of intercurrent affections, while others have one recurrence. 41 who have been operated upon during this past year have had no return of their trouble, and in 17 women operated upon two years ago the cancer has not reappeared. Amongst this last series 3 have had no recurrence for three years, 1 for four years, and 1 for five years.

He thought it very important that the operations should be performed as early as possible. Out of the 30 other extirpations, 17 were for myomas, 5 for prolapse, 5 for severe nervous troubles, 3 for diseases of the annexes of the uterus. Most of them were operated on by the vaginal method, or supra-vaginal. The vaginal method leaves patients in a state in which they are less liable to take cold, and, on the other hand, certain women cannot resist an abdominal incision, which is due to a weak state of the cardiac function. Out of 110 extirpations of the uterus there were only 6 deaths—that is, 4.5 per cent.

DR. FREUND, of Strasburg, extirpated a carcinoma of the neck in 1878 by laparotomy, and his patient is still alive. As far as he knew, it was a unique case.

DR. LEOPOLD did not think the new methods of extirpation of the uterus so advantageous, and he did not find that in extirpation *per vaginam* that we work in the dark. Even where the vagina is very narrow, as in virgins, it requires only two deep lateral incisions to have all we desire before us; as to the arteries, they can be felt.

DR. HEGAR said that it was not the narrowness of the vagina which had most troubled him, but the utero-sacral ligaments.

ON POST-PARTUM HEMORRHAGE.

DR. DÜHRSSEN, of Berlin, said that, according to the statistics, there dies in Prussia every day a woman by hemorrhage following labor. He thought that the easiest manner to diminish the mortality was to plug the parts. The plugging is a hemostatic process; it produces uterine contractions, instead of preventing them; moreover, it acts by compression on the uterus and vagina. Plugging will succeed when massage, hot water, etc., have given no results. It acts surely in uterine inertia and brings about powerful contractions. In cases of placenta prævia direct compression arrests the blood, but this manual compression can be replaced by a plug.

DR. DOHRN, of Koenigsberg, had used plugging with the iodoformed gauze in a case of atony after Cæsarean section; immediately the contractions returned, and the operator was able to go on carefully with his suturing. No septicæmia need be feared if the substances which form the plug have been dipped for five minutes in boiling water. Iodoform gauze can be used in 10 or 20 per cent. strength, or, again, absorbent cotton or linen dipped in a carbolic acid solution, 3 per cent., so as to destroy all the germs which could be found in the uterus.

DR. OLSHAUSEN thought that the important part in hemorrhages occurring after labor is to diagnosticate rapidly the source of the hemorrhage, and to know whether we have to deal with a case of atony of the uterus or a tear of the neck. Hemorrhages from the neck are quite frequent, and difficult to diagnose, especially when we have placenta prævia. He was not in favor of hot water in ruptures of the neck, for by this means we remove the clot every time it is formed. As to the plugging in uterine inertia, he did not think it a very rational process, for the plug prevents the uterus from contracting. If Dührssen has had fifty-seven cases which proved successful, he also has had failures; he knew two cases which occurred in the hands of his assistants, who were quite practical men. The best means to deal with uterine inertia is by the bi-manual massage of the uterus.

DR. FEHLING was of the opinion of Dr. Olshausen, and thought that plugging of the uterus brings about an anti-physiological state, as, in the normal state, there is no cavity in the uterus.

DR. DOHRN said that in four cases of uterine inertia in which he had tried everything without success, he finally used plugging, and obtained immediate hemostasis. In a fifth case, for uterine atony during Cæsarean section, plugging brought on immediate contraction of the uterus. He was, however, of the opinion of Dr. Olshausen, and thought that the diagnosis of the seat of the hemorrhage ought first to be made.

DR. STOEPPER, of Mannheim, had for the past twenty years used bi-manual massage, with perfect success.

DR. KUSTNER said that in his region old women are in the habit of pulling on the cord, so that he often met with uterine atony and often had the opportunity to

practice plugging with iodoform gauze. He had seen, in Jena, a case of death by hemorrhage due to an aneurism seated at the placental insertion; if plugging had been resorted to, the woman would certainly not have died.

VENTRO-FIXATION OF THE UTERUS.

DR. KUSTNER thought that in retroflexion of the uterus the method of Schultze gives better results than ventro-fixation. In a case of ventro-fixation for an interstitial myoma, he produced an abortion at the third month. He had treated forty-six retroflexions by Schultze's method; in nineteen cases he had to deal with adhesive retroflexions.

DR. FROMMEL thought that ventro-fixation ought to be practised only after having tried more conservative methods.

DR. SÄNGER had operated on twelve cases of ventro-fixation; one of his operated patients is now pregnant in the sixth month; she has a few pains, and her physician keeps her in bed. In all the cases he had operated upon the uterus was movable.

DR. KUSTNER thought that the suture of the uterus to the parietes prevents the expansive movement of the uterus during pregnancy.

DR. HEGAR once did this operation at his clinic, but the uterus became detached.

The next Congress of the German Society of Gynecology will be held in Bonn, in 1891.

CORRESPONDENCE.

A WINTER VACATION TO THE WINDWARD ISLANDS.

III.

ON deck by seven o'clock in the morning, and before us lay the shore of the Island of Guadeloupe; past mighty mountain, bold headland, and cosy bay we steamed for about three hours. On the slopes of the hills and in winding valleys were wide stretches of light-green cane fields. Stately sugar mills and comfortable planters' houses were thickly scattered about. As we steamed past, the island appeared more prosperous than any we had yet seen. The French bestow more care on their West Indian possessions than the English or Danes. Large enterprises prosper. The most extensive cane sugar factory in the world, so said, is located at Besse Terre, and formed one of the chief attractions of our visit. Green cane enters at one end and is delivered at the other in the form of dry sugar in bags in about six hours. Cane is sent to the mill from long distances about the island at a great saving to the planters. A large amount of rum is manufactured at this mill. I was told that this company purchased a large share of the rum made in the Islands in addition, which is sent to France, and after undergoing a manipulation peculiar to the trade reappears in the market in the form of French brandy. The language is French exclusively. More business appeared to be going on than in any place we had yet visited. The stores were numerous and well stocked with goods of French manufacture. We visited a natural history museum very complete in its collection of the flora, fauna, mineral and cultivated products of the island. A department of the collection that was especially attractive consisted of the native woods. Large specimens in cross and longitudinal section were shown. They were susceptible of high polish, and the grain and coloring of many of them were very beautiful.

Mr. H. left us at this place, very much to my regret. I think I had nearly pumped him dry of his abundant stock of information about the West Indies; but justice requires me to state that he was always ready to impart his well-arranged facts. I wish I had space to repeat a story of his about a voyage to Pensacola from St. Thomas in a schooner with an insane captain. It was one of the most blood-curdling stories of personal adventure I ever listened to. Here is one story at his expense that will bear telling. When he arrived at Basse Terre he found a large consignment of staves and barrel heads piled up on the landing under quite a large port-charge which had been refused by the consignee on the ground that there were no bungs sent with them. Can one imagine anything less complete in the eternal fitness of things than a barrel without a bung? But there he was, and nothing could get him out of the scrape but an equivalent number of bungs.

It was interesting to observe the marked difference in physical traits between the French negro half-breed and the English. The latter is thick-set, burly, the light-hearted look of the pure African blocked out, giving place to a surly, brutish expression. The French cross gives a breed of finer lines. The women are slender, petite, clean—a thing of pleasure and song. The men are small, lean, elastic, and altogether a better race to live with. The intermixture, in the towns at least, appears to be the rule, a pure-blood negro being the exception; while in the English Islands the reverse is true.

Our arrival at Guadeloupe was signalized by quite a rare event. The most conspicuous object as we neared land was the cone of Soufriere, a volcano nearly 5000 feet high. For the first time in six months it was without a cloud. The crater was clearly visible clad in green to the excoriated edge, beyond which we could see a vast rent, the result of the eruption of 1840, when it was last active. At that time the island suffered severely. A large volume of smoke poured out of the summit near the margin of the recent fracture, and blew out horizontally a dark streak across the sky. Soufriere was smoking her pipe, as the natives say. From the sea the mountain appears difficult of access. From the land side it is but a prominence in a central spine of mountain that lies parallel with the long axis of the island. One of the results of the last eruption was an earthquake which shook down many of the buildings at Besse Terre, and among them the cathedral. It has been rebuilt after a manner called earthquake-proof. It is constructed of iron with an outside veneer of stone. Throughout the interior huge rivets and bolt-heads may everywhere be seen covered with white paint. It may be earthquake-proof, but I doubt it.

We left in the afternoon, and as we steamed out to sea we took another look at Soufriere. She was covered with a mass of towering cloud, and was smoking her pipe after her usual manner, with her face hidden from the gaze of man in shadows and tears.

The next morning we were snugly lying tied up at a wharf at St. Lucia. It is the finest harbor in the Islands. The English Government is now transferring its naval

station from Barbadoes to Castries, as the town is named. Forts were being built, black troops drilled, steam dredges at work and coal accumulating in large mounds. Hills, terminating in sharp cones, surrounded the bay and town. The town did not appear to have any white inhabitants except the military, and was entirely without interest. We always set up the camera in the market-place of each town as a point to secure characteristic views. The market-place is generally the principal square, and unfortunately the buildings were all alike—an open shed, or a number of them, with corrugated iron roofs. There is something about iron, however it is employed architecturally, that is fatal to the picturesque. Often the groups of people were enough so to compensate for the defect in the buildings. The sales were made by women, each one squatting over a little pile of yams, cocoanuts, or fish, bread, or cake. The noise was deafening. They appeared to be quarrelling, but it was only a friendly dispute over prices. Cooking was always going on over little charcoal fires, the pots or fryingpans supported on a couple of stones. Charcoal is the fuel, each day's supply being bought at the market.

At sea again in the afternoon. Shortly before sundown we passed one of the most remarkable sights of the Islands. These are the Pitons of St. Lucia. Two mountains rising out of the sea at the land's edge, side by side, perpendicular, like obelisks of indescribable grandeur, 3000 feet high. No near approach of the interior mountains detracts from their proportions. A span of about 800 yards separates them, with a little bay between. The surf piled up grandly at their base. Dark gray, brown, verging into black, appeared the general color, with streaks of red and irregular patches of green where creeping plants and shrubs had found root. It appeared madness to attempt to climb them, yet it is said that four sailors from the English fleet had made the attempt. After getting up a few hundred feet one of the men lost his grip upon the rock and fell; a few hundred feet higher a second dropped, still higher a third, and the fourth man, who had nearly reached the top, seemed to grow faint and fell. No one ever knew the cause, but they were supposed to have been bitten by the fer de lance, that is believed to make its home in the Pitons. St. Lucia, like Martinique, is infested by this terrible serpent. It belongs to the rattlesnake family, but the latter is as harmless as a babe compared to it. Agile, powerful, quick to rage, with a disposition to attack and pursue, it is the most deadly of the serpent enemies of man.

St. Lucia is beautiful. The mountains are many of them inert volcanoes. From one ragged peak a thin line of smoke drifted across the sky. But the beauty was repellant, such us one might fancy would be that of a fallen angel. The forests were so dark and impenetrable, the mountains so fantastic, and the valleys, dark and profound, were too much like rents in the face of Nature to leave a pleasant memory. One could make studies here for illustrations to the Inferno. The sea off St. Lucia is of a blue so deep and prismatic that it is the latter quality alone that prevents its being called black rather than blue. With the gloom of St. Lucia and the blue-black of the sea, it seems like a world in mourning. It was off the Pitons that Rodney fought and won the great battle with the Count de Grasse that restored to England her possessions in the West Indies.

Our next stop was made at Barbadoes. I found but little to interest me there. Everything appeared prosperous. Carlisle Bay was full of shipping, among them half a dozen English men-of-war. The proper thing to do when one has a day at Bridgetown is to take the little railroad fourteen miles long to Craine's Hotel, on the eastern side of the island, and look at the surf. The island lies at the outer edge of the group, and takes the full buffet of the waves of the vast middle Atlantic. The war here between sea and rock is eternal. The island had considerable interest as being the most densely populated to the square mile on earth. So densely crowded is it that the negro cannot squat on a little patch of land, but is obliged to work. Hence, Barbadoes may be said to be the only exception to the ruin that has overtaken the other Islands. Two or three days in a week is all the work to be had out of the negro throughout the Islands. Between two such deadly enemies as bad labor and beet-root, the poor sugar planter has come to grief.

Another night at sea and a glorious surprise at St. Vincent. Kingstown, with its red roofs showing through a forest of palms, lies in the embrace of its infolding hills draped in forest from shore to crest. Beyond were volcanic-shaped mountains, each with its Tam o' Shanter of cloud. Here were said to be craters and lakes, cold, green, and mysterious. The sides were carved into deep ravines that twisted into the dark, green depths and gave exquisite variations in color as fragments of cloud trailed their shadows after them. It would be difficult to conceive of a more exquisite picture than that of town and island from the deck. I dreaded to go ashore lest I should be disenchanted, and I was.

The chief attraction of the town is Ja-ja, an African king from the West Coast. He refused to make a treaty with the English government, and was accordingly persuaded that a voyage on a gunboat to St. Vincent, and an abode there for the rest of his life, would very materially promote his health. He has a liberal income of £1000 from government, a house to himself, horses, servants and dogs. He came off to the ship and had luncheon. The captain fired a salute and had the crew drawn up to receive him. He enjoyed the honors paid him greatly. He is very fond of Captain Hubbard, who always pays him great attention. His tribe are said to be man-eaters. His Majesty appeared very benevolent and mild, so that it was hardly possible to believe that the nice-looking, middle-aged African gentleman would eat you. I have no doubt that if the fortunes of war were to render that event possible, that he would proceed to the feast with every consideration for your feelings. He is allowed to have but one wife with him at a time, out of consideration, I suppose, for the high state of morals existing on the island; but there is a rotation in office about twice a year, which in a measure compensates. When he goes out a white police sergeant trots at his heels, who appears very much lower in the social grade than the poor savage. Surely there is a divinity that doth hedge a king.

I was surprised at the number of drug stores to be seen in the town; the same being true of all the Islands. The amount of patent medicine consumed by the colored people is enormous. To purchase a bottle of some compound costing a dollar confers quite a social distinction. I may state another thing that suprised me when I heard of it, namely, that a very extensive business in life insurance is done among these people, nearly all the great

companies in the States having agents travelling about among the Islands. They pay an extra premium here, but even then it does not appear a very safe investment, unless it is done on the theory that the insured is not expected to pay more than his first premium when he allows his policy to lapse. In fact, it is hard to understand how he would raise the money to pay more. It is not because he is such an exemplary husband and father that he so readily discounts the future, as the policies are all small endowments for short terms.

Ely Van de Warker.

NEWS ITEMS.

The Annual Meeting of the Association of American Physicians will be held in the Army Medical Museum, Washington, on September 18th, 19th, and 20th, under the Presidency of Dr. Francis Minot, of Boston. The programme has just been issued and contains the following papers:

The President's Annual Address, by Francis Minot, of Boston.

The Early Stage of General Paralysis, by C. F. Folsom, of Boston.

Tetany, by James Stewart, of Montreal.

Tetany and a New Theory of its Pathology, by John T. Carpenter, of Pottsville.

Thrombosis of the Cerebral Sinuses and Veins, by A. B. Ball, of New York.

Chylous Effusions into Serous Cavities, by S. C. Busey, of Washington.

Substitutes for Opium in Chronic Diseases, by J. F. A. Adams, of Pittsfield.

Remarkable Case of Slow Pulse, by D. W. Prentiss, of Washington.

Discussion on the Relation between Chlorosis, Simple Anæmia, and Pernicious Anæmia, including Leucocythæmia and Hodgkins' Disease. Referee, Frederick P. Henry, of Philadelphia; co-referee, F. Forchheimer, of Cincinnati.

Primary Cancer of the Duodenum, by E. N. Whittier, of Boston.

Primary Cancer of the Gall-bladder and Ducts, by John H. Musser, of Philadelphia.

Gastric Neurasthenia, by G. M. Garland, of Boston.

Specimens from Two Cases of Cretinism, by W. F. Whitney, of Boston.

The Anatomical and Physiological Relations of Lesions of the Heart and Kidneys, by H. F. Formad, of Philadelphia.

The Contagium of Diphtheria, by P. Gervais Robinson, of St. Louis.

A Supplementary Inquiry into the Frequency with which Lead is Found in the Urine, by James T. Putnam, of Boston.

Discussion on the Relations of Rheumatism to Rheumatoid Arthritis. Referee, William Osler, of Baltimore; co-referee, Morris Longstreth, of Philadelphia.

How Far may a Cow be Tuberculous before the Milk becomes Dangerous as a Food Supply? By Harold C. Ernst, of Jamaica Plain.

The Bacillus Tuberculosis, by J. T. Whittaker, of Cincinnati.

Hot Air Inhalations in Tuberculosis, by E. L. Trudeau, of Saranac Lake.

On Thursday evening, September 19th, it is proposed that the Association shall have an Annual Dinner.

The Statutes of Tenth International Congress, Berlin, 1890.—The following statutes of the Tenth International Medical Congress have been announced.

Article I. The Tenth International Medical Congress will be opened on Monday the 4th of August, 1890, and closed on Saturday the 10th of August, 1890, in Berlin.

II. The Congress will consist of approved physicians who have registered as members and who have given in their card of membership.

Members will pay a registration fee of twenty marks (about $5.00), for which they will receive a copy of the transactions of the Congress as soon as they are published. The date for the registration of members will be determined later.

III. The objects of the Congress are purely scientific.

IV. The work of the Congress will be divided into sections. When registering the members should intimate with which section they desire to associate themselves.

V. Each section will have a chairman, three vice-chairmen, an undetermined number of honorary chairmen and secretaries.

VI. Further information regarding the general sessions and the sessions of each section will be published later.

VII. The general sessions will include proceedings relating to the congress in general, and addresses and communications of general interest.

VIII. The work of the sections is being formulated.

IX. The addresses before the general session will be determined by the organizing committee.

Proposals regarding the work of the Congress should be sent in before July 1, 1890, to the organizing committee, who will determine whether such proposals be accepted or not.

X. All addresses and communications must be sent to the secretary before the close of the session. The editorial committee shall determine to what extent or in what length such articles shall be printed in the transactions.

XI. The official languages of all the sessions will be German, English and French. The statutes as well as the programmes will be printed in all three languages.

XII. The time allowed for introductory addresses in the sections will be limited to twenty minutes. Discussions will be limited to ten minutes.

XIII. The acting chairman shall have charge of their individual sections subject to the general rules.

XIV. Students of medicine and men and women who are not physicians may be invited by the chairman to seats in the audience, or permission for their admission may be secured from the chairmen.

XV. Communications or questions in the several sections should be addressed to the respective chairmen. All other communications to the general secretary.

The Prophylaxis of Tuberculosis.—The report of the Commission appointed by the Congress of Tuberculosis to investigate tuberculosis in man and animal, the dangers of using tuberculous milk and meat as food, and also the dangers of the spread of the disease by means

of infection, was read before the Academy of Medicine of Paris on the 31st of July.

The Commission was a most able one—being composed of the following: Drs. Chauveau, Butel, Cornil, Grancher, Landouzy, Lannelongue, Legroux, Leblanc, Nocard, Rosignol, Verneuil, Villemin, and Petit. The report was received and approved by Drs. Bouchard, Brouardel, Potain, and Proust, all members of the Congress on Tuberculosis. Their report is as follows:

I. Of all diseases, tuberculosis claims, both in city and country, the largest number of victims. In 1884, a year chosen at hazard, for example, there were 56,970 deaths in Paris, and of these about 15,500—over a quarter—died of tuberculosis. Pulmonary phthisis is not the only manifestation of tuberculosis, as is generally thought by the public. Physicians have discovered that many diseases may be due to tuberculosis, among others, bronchitis, colds, pleurisy, scrofula, meningitis, peritonitis, enteritis, tumors, osseous and articular lesions, cold abscesses, etc. All these may be directly caused by tuberculosis, and their utimate prognosis is no more hopeful than that of phthisis pulmonalis.

II. Tuberculosis is a parasitic, virulent, contagious, and transmissible disease, caused by a microbe—*the bacillus of Koch*. This microbe can penetrate into the organism either through the digestive tract, by means of food, or through the lungs by means of the inspired air, or through the skin and mucous membrane by means of abrasions, punctures, wounds, or ulcerations. Certain diseases, such as measles, smallpox, chronic bronchitis, and pneumonia, and certain constitutional conditions, due to diabetes, alcoholism, syphilis, etc., greatly predispose the contraction of tuberculosis. The causes of tuberculosis being known, the precautions taken to prevent the entrance of the germs into the body are capable of preventing its propagation. We have an encouraging example in the results obtained in typhoid fever, in which the epidemics diminish in all towns where the necessary measures are taken to prevent the typhoid germ from mingling with the drinking-water.

III. The parasite of tuberculosis may be found in the milk, muscles, and blood of animals which serve as food for man (ox, cow especially, rabbit, poultry). Raw meat or underdone meat and blood being capable of containing the living germ of tuberculosis, should be prohibited. Milk, for the same reason, should only be consumed after having been boiled.

IV. Owing to the danger arising from milk, the protection of young children, who are peculiarly predisposed to the contraction of tuberculosis (over 2000 children under the age of two years dying annually of tuberculosis in Paris alone) should specially demand attention of both mothers and nurses. The ideal food for the infant is the milk of a healthy woman. The tuberculous mother must not nurse her child, but should confide it to the care of a healthy nurse, living in the country, where, under the best hygienic conditions, the risks of contagion from tuberculosis are much less than in town. The child thus brought up will have the best chance of escaping tuberculosis.

If nursing at the breast is impossible, the infant may be fed artificially upon cow's milk by means of the bottle or spoon; the milk must, however, always be boiled. Unboiled milk of asses and goats is infinitely less dangerous.

V. Owing to the dangers arising from the meat of slaughtered animals, which may preserve all the appearances of health even when tuberculous, the public has every interest in being assured that the inspection of meats, as required by the law, is being properly and generally practised. The only certain method of avoiding the danger of meat coming from tuberculous animals, is to cook it to such an extent that the interior portions are as well done as the surface. Only thoroughly roasted, boiled, or fried meat is entirely devoid of danger.

VI. On the other hand, the germ of tuberculosis may be transmitted from the human tuberculous subject to the healthy human subject, by means of the sputa, pus, dried mucous discharges, and all objects laden with tuberculous dust; it is necessary, therefore, in order to insure security from the transmission of tuberculosis, to:

1. Be known, that the sputa of phthisical subjects is the most formidable agent of transmission of tuberculosis; there is danger to the public in discharging the sputa upon the earth, carpets, hangings, curtains, napkins, handkerchiefs, clothes, and coverings.

2. Be well understood, that the use of spittoons should be imposed everywhere and by every one. These spittoons should be daily emptied into the fire and well washed with boiling water. They should never be emptied upon dust-heaps or in the garden, where they might lead to the infection of poultry, or in latrines.

3. Never sleep in the bed of a tuberculous subject; to occupy his room as little as possible; but, above all, do not allow young children to sleep there.

4. Remove from places or dwellings inhabited by tuberculous subjects all persons who may be considered as predisposed to the disease; the children born of tuberculous parents, those having had measles, smallpox, pneumonia, repeated attacks of bronchitis, or suffering from diabetes, etc.

5. Not to use articles which possibly may have been contaminated by phthisical patients (linen, bedding, clothing, articles of toilet, hangings, furniture, toys) except after thorough disinfection (high-pressure steam, boiling, sulphur vapors, or lime-washing).

6. Insure that the rooms of hotels, furnished apartments, cottages, or villas occupied by phthisical patients in watering places or winter resorts, are furnished and carpeted in such a manner as to render them capable of undergoing easy and thorough disinfection after the departure of each patient. It would be better if such rooms had neither curtains, carpets, nor hangings; but were washed with lime and the floor covered with linoleum. It is of the highest importance to the public that they should prefer the hotels in which such indispensable hygienic precautions and measures for disinfection are thoroughly carried out.

Dr. Dujardin-Beaumetz, in the discussion which followed the reading of the above report, said that on the whole he approved of the report of the Commission, but he must remind them that it was a mistake to think that tuberculosis was more frequent in towns than in the country. Exactly the reverse is true. Further, some of the statements made by the Commission were purely hypothetical and unsubstantiated by facts. Contagion by means of milk is absolutely exceptional. For this to take place, it would not only be necessary for the cow to be tuberculous, but also for her to be afflicted with tuberculous

mammæ. Again, the transmission of tuberculosis by tuberculous meat had not been proven. However, we know that the microbe dies in a weakly acid solution; hence the ingestion of tuberculous meat cannot be dangerous, since the contents of the stomach are acid.

M. DUCEMBERG thought milk from a tuberculous cow most dangerous.

DR. GERMAIN SÉE remarked that the Commission stated the possibility of the microbe entering the system through the air. This assumption he regarded as false. In the light set forth by the Commission, tuberculosis would, indeed, be nothing else than a pest. Koch had demonstrated that the tubercle bacillus cannot live in the air. It can only live and reproduce itself in the organism. Regarding the use of spittoons, he agreed with the Commission. As long as the sputa is kept moist there is no danger, but when dry it is different. Regarding the infectivity of tuberculous milk, he agreed with Dujardin-Beaumetz. To carry out the views of the Commission as to the use of raw meat, he thought impossible. Were all meat cooked according to the requirements of the Commission, little of it worth eating would be left. A temperature of 320° F. is necessary for the destruction of the bacilli. Meat is not eatable after having been subjected to a temperature much over 195° F. Moreover, it has been conclusively proved that the consumption of tuberculous meat is devoid of danger.

The further discussion of the report was adjourned to the next meeting of the Academy.

Johnstown Relief.—The joint committee on Johnstown relief of the College of Physicians and the County Medical Society requests that all members of sub-committees who have not yet made complete returns, should do so at once, and also send in their collection books for final settlement. The committee desires to close its accounts not later than September 1st.

Brown-Sequard's Testicular Liquid.—DR. BROWN-SÉQUARD describes the composition of the liquid as follows: To the blood of the testicular veins, semen and juice extracted from a testicle, crushed immediately after it has been taken from a dog or guinea-pig, he adds distilled water in a quantity which never exceeds three or four times their volume. The crushing is always done after the addition of water. The liquid is then filtered through filter paper or a Pasteur filter. For each hypodermatic injection he used nearly sixteen minims of the filtered liquid.

A Premium on Fecundity.—We quote the following from the *Lancet* of August 3d:

With the view of encouraging the multiplication of the French nation, the Chamber of Deputies have adopted a proposition made by Dr. Javal, to the effect that fathers or mothers of seven children should be exempt from personal or house taxes.

Prof. Alexander B. Mott.—The Faculty of the Bellevue Hospital Medical College desire to record in their minutes an expression of deep sorrow at the death of their associate, the late Professor Alexander B. Mott. Professor Mott was one of the few remaining members of the original faculty of the college. For twenty-eight years he had given his best efforts to the institution, of which he was one of the founders; and many thousands of alumni can bear testimony to the value of his teaching. Endeared to his colleagues by long and intimate association, his death is felt by each one as the loss of an earnest teacher, a good and a true friend.

AUSTIN FLINT,
August 15, 1889. Secretary.

NOTES AND QUERIES.

USE OF THE TESTICLES AS REINVIGORATORS.

To the Editor of THE MEDICAL NEWS.

The old saying, that "there is nothing new under the sun," is beautifully illustrated by the latest of Dr. Brown-Séquard's "discoveries." For over twenty years, to the personal knowledge of the writer, and probably for as many centuries, the Chinese have used the testicles of the sea lion for the purpose of stimulating the organs of generation in man and as a general nerve stimulant.

A great many sea lions are killed in the immediate vicinity of this place, principally for their oil; but the bristles, and penis with testicles, are sold to agents of the Chinese. The first-named are used for ornaments, but the last two articles are used by them as medicine. At times as many as one hundred and fifty are seen drying in the sun. When needed, a portion of a testicle is grated into a vessel, and an infusion is made which is administered *pro re nato*. Hoping that this may add something of value to the literature of this interesting subject, I am, respectfully yours,

J. T. MCCORMAC, M.D.
MANSFIELD, COOS BAY, OREGON, August 5, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 13 TO AUGUST 19, 1889.

By direction of the Secretary of War, a Board of Medical Officers, to consist of: ANTHONY HEGER, *Lieutenant-Colonel and Surgeon;* JOHN O. SKINNER, *Captain and Assistant Surgeon;* and JAMES C. MERRILL, *Captain and Assistant Surgeon*, will assemble at the U. S. Military Academy, West Point, New York, on August 25, 1889, or as soon thereafter as practicable, to examine into the physical qualifications of the candidates for admission to the Academy.—Par. 9, *S. O. 185, A. G. O.*, August 12, 1889.

GARDNER, WILLIAM H., *Major and Surgeon* (Washington Barracks).—Is hereby granted leave of absence for one month.—Par. 1, *S. O. 183, Headquarters Division of the Atlantic, Governor's Island, New York City*, August 13, 1889.

MATTHEWS, WASHINGTON, *Surgeon.*—Promoted to Surgeon, U. S. Army, with rank of Major, to take effect from the tenth day of July, 1889, vice Town, promoted.—*War Department, Washington, D. C.*, August 14, 1889.

HAVARD, VALERY, *Captain and Assistant Surgeon.*—Is granted leave of absence for one month, to take effect about October 1, 1889, with permission to apply to Division Headquarters for an extension of one month.—Par. 3, *S. O. 86, Department of Dakota, St. Paul*, August 10, 1889.

By direction of the Secretary of War, JOSEPH Y. PORTER, *Captain and Assistant Surgeon*, now at Jacksonville, Florida, will, if the state of his health will permit, proceed to Jackson Barracks, Louisiana, and report to the commanding officer of that post for temporary duty, and by letter to the commanding general Division of the Atlantic.—Par. 16, *S. O. 186, A. G. O.*, August 13, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, AUGUST 31, 1889. No. 9.

ORIGINAL ARTICLES.

SOME OBSERVATIONS ON THE CAUSATION AND TREATMENT OF ASTHMA.[1]

BY BEVERLEY ROBINSON, M.D.,

PROFESSOR OF CLINICAL MEDICINE IN BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK.

FEW diseases have occasioned warmer discussions than asthma, on account of the obscurity which prevails in regard to its nature. By some it is regarded as a pure neurosis, capable of being excited in all sorts of ways, and often by the most trivial circumstance or change. For others there is scarcely such an affection as *nervous asthma alone* and independent of evident pathological changes in the chest, or in other regions of the body. From either point of view the essential part of the disease is the disturbed innervation of the bronchi, which is accompanied by paroxysmal dyspnœa. The spasmodic nature of the disease was admitted by Laennec and Andral in its early periods, because they were unable to discover in the chest sufficient lesions to account for the attacks of difficult breathing. Later the precise seat and character of the spasm of the bronchi was determined by Dr. C. B. J. Williams, by means of the artificial excitation to which the nerves of the bronchial tubes were submitted.

The anatomical and physiological facts in support of the spasmodic theory of asthma are: 1. The fact that muscular fibres are found throughout the extent of the bronchial divisions, even to the infundibula or air-sacs. 2. That these muscular fibres can be contracted to the point of closure under different kinds of stimuli.

Clinically it is supported by the facts: 1. That an attack of asthma may begin suddenly in an individual without evidences of any chest affection. 2. On account of the variety of the pathological lesions which precede or accompany it. 3. Because the pathological conditions are often mere sequelæ of long-continued asthma. 4. Because sometimes asthmatic attacks disappear although the chest lesion remains, and because no one of these lesions is always adequate to explain the asthmatic paroxysm. 5. The character of the asthmatic attacks resembles very much different nervous affections, like neuralgia or migraine; although many pathological conditions may tend to produce it, yet it is a disease apart, affecting the nervous system. 6. The great value of the administration, by the stomach, of the nitrites in the relief of asthma, as shown by Dr. Thomas R. Frazer, of Edinburgh, in his admirable clinical study of its cause.[1]

As opposed to the spasmodic theory, it is stated that the culmination after a paroxysm of asthma is marked by a profuse sero-mucous exudation accompanied by cough and expectoration (Bosworth). It is thought, therefore, that this theory should be abandoned. In its place, it is contended that the theory of Webber should be admitted. This theory is based upon the idea that the asthmatic paroxysm is not due to spasm, but to a paralysis of the vaso-motor nerves which regulate the calibre of the blood-vessels in the bronchial mucous membrane. Under the influence of this paralysis the membrane becomes suddenly swollen, and thus encroaches upon the calibre of the tubes and accounts for the dyspnœa in inspiration and in expiration, through reduction of the calibre of the air-passages and insufficient movement of air in their interior. It must be recognized, however, that the dyspnœa in asthma is also caused by insufficient contact of air with the blood-vessels in the pulmonary vesicles. This occurs when the air vesicles are filled with liquid or semi-liquid contents, as may and does occur in asthma brought on by preceding bronchitis.

My object, however, in this paper is not to debate theories of the asthmatic attack, but simply to make known a few clinical observations of interest in regard to its causation and treatment. During the past winter, while on duty at St. Luke's Hospital, several patients came under my care for the consequences of malarial infection. Amongst them four gave histories from which it was evident that asthmatic attacks accompanied frequently an outbreak of the poisoning. In these instances, also, the curative influence of anti-malarial treatment upon asthma, subsequent to the unsuccessful trial of ordinary medication for bronchial inflammation, was undoubted. I shall narrate the cases in brief terms:

CASE I.—W. L., forty-four, married, Englishman, house painter, now resides on Long Island, entered St. Luke's Hospital, October 22, 1888. Intermittent fever at fifteen years of age; again at thirty-two years. Four weeks previous to admission to hospital

[1] Read before the American Climatological Association, June 25, 1889.

[1] The American Journal of the Medical Sciences, October, 1887.

patient had a chill followed by fever and sweating. These attacks occurred daily for two weeks, and afterwards every other day. Patient is troubled with cough and wheezing whenever he has an attack similar to the one described. Patient has had a cough for the last three weeks, accompanied by irritation and tickling in the chest. About the time of the initial chills, patient has some difficulty of breathing and obstruction in the nasal passages. This lasted one week. Examination of lungs negative; spleen enlarged. Patient had chills and fever in the hospital. Microscopic examination of blood, on intermediate day of chill, revealed hæmatozoon malariæ. Patient relieved of chills, fever, bronchial and asthmatic manifestations by the use of quinine. Discharged cured, November 13, 1888.

Case II.—L. L., forty-two, single, Englishman, boat maker, was admitted to hospital October 3, 1888. Has had frequent chills and fever since last August. Contracted malaria in Costa Rica. Chills are usually quotidian. Patient had a chill followed by fever shortly after coming into the hospital. Examination of lungs negative, except a few bronchial râles. Patient "accuses dryness in throat and pain on swallowing, especially acids." A few days later, patient stated he was less choked up in his breathing and coughed less than on admission, but throat not less dry, particularly in the larynx. Nose somewhat obstructed by deviation of septum toward the left nasal passage anteriorly. In median portion of the nasal passage septum deviates to the right. In this region there is, also, more marked thickening of the pituitary membrane. Pharynx pale, thickened, œdematous looking, no mucus. In nasopharynx no mucus, pale, œdematous. Patient says cough is only occasional; spleen is enlarged.

October 8. No dryness, and absence of all symptoms in upper or lower air passages, which were present on admission. This result had been obviously obtained by the use internally of Warburg's extract. Discharged cured, November 30, 1888.

Case III.—A. J., male, thirty-four, missionary, admitted November 27, 1888. "Cough and constricted feeling in chest," obviously due to intermittent fever taken on West Coast of Africa. On examination, lungs negative. Discharged improved, December 3, 1888. Re-entered, January 6, 1889 (been well about three weeks). Last fourteen days "had cough and pain in chest." A few days previous to admission to hospital had chills followed by sweating—chill recurred the day before he came into hospital. Examination of chest showed "good resonance, a few moist râles, sibilant and sonorous râles." Treatment was anti-malarial.

Case IV.—J. G. P., thirty-six, married, clerk, admitted to St. Luke's, October 11, 1888. Has had tertian type of malaria for ten years. Several nights ago chills and fever began again; since that time repeated chills, followed, or not, by fever and accompanied by "difficult breathing and morning cough *without* much expectoration." Examination of lungs shows "hyper-resonant percussion note, sibilant and creaking râles, moist râles on cough." Patient dates his difficulty of breathing back to his first attack of chills and fever, but can trace no connection between the two. Patient was ordered to take Warburg's extract.

It seems to me that these cases show a very evident causative influence of malarial poisoning in producing bronchial irritation and asthma. In two of the cases ordinary expectorant mixtures were first employed without the slightest beneficial result following. The patients were treated with quinine, or Warburg's extract, and immediately improved.

In the case with partial nasal occlusion the anti-malarial treatment was equally efficacious, thus demonstrating that the nasal organ was not responsible for the asthma. In the different articles on asthma that I have read, I have found little or nothing said of malaria as an efficient cause. Humoral asthma is, of course, spoken of, and allusion is made to morbid conditions of the blood circulating through the system, and especially the nervous centres. Duclos, Bouillaud, and Trousseau were of this opinion, but thought that the morbid changes in the blood were the same that gave rise to gout, rheumatism, and hemorrhoids, and only caused spasm of the bronchi when the "peccant" matter was eliminated by this channel.[1]

In treatises or articles on malaria I find cursory allusions made to the influence of the miasm on the bronchial tract. Thus Liebermeister speaks of "a bronchial catarrh sometimes preceding the paroxysm, and manifesting an exacerbation at the moment of the outbreak."[2] Loomis[3] says, you may have a form of chronic malarial infection showing "itself in catarrhal inflammations affecting the mucous membrane of the stomach, intestines, and bronchial tubes. Patients have a form of bronchitis which is really a chronic malarial infection."

An analogous explanation to that offered by Dr. D. E. Keefe, in the *Boston Med. and Surg. Journ.*, of May 16th of the present year, to interpret the production of irregular œdema complicating malaria is probably equally good for my reported cases, *i. e.*,

"the poison of the disease acts on the nerve-centres, and through the sympathetic ganglia paralyzes the vaso-motor nerves, thereby dilating the bronchial arterioles, and thus causes an afflux of blood to this part."

And Dr. Keefe goes on to say what is really a translation of Webber's theory of asthma:

"This superabundance of blood the veins of the part find it more than usually difficult to return to the circulatory centre, in consequence of the congestion existing, ... and pressure on and narrowing of the lumen of the veins and lymphatics. In this manner stasis is undoubtedly produced, and may often be followed by transudation." This opinion, however, conflicts with Bosworth's affirmation,[4] for this author distinctly states that this condition "differs from inflammation in that

[1] Berkart: On Asthma, p. 41.
[2] The Infectious Diseases, p. 35. Detroit, Michigan.
[3] Lectures on Fevers, p. 175.
[4] Trans. of Amer. Climat. Association, September, 1888, p. 179.

there is no tendency whatever to the escape of leucocytes."

There is another form of so-called humoral asthma which is not infrequently met with. The cases to which I refer are those forms of faulty secondary digestion in which this condition seems to account for the incitement of the paroxysms. In these cases the asthma is not occasioned directly by the presence of the food in the stomach, but later, when the veins have probably taken up the materials elaborated by the digestive process—and which in the asthmatic seem to stimulate unduly the hypersensitive pulmonary plexus. The blood, particularly in the gouty subject, seems to become readily charged with imperfectly changed and effete substances. This is an effect of deficient metabolism. It seems probable, in these cases, that not only the peripheral pulmonary nervous system, but also the central portion of it, is irritated unduly by the matters referred to. I have seen two such cases during the past winter:

Case V.—The first was that of an old lady, a widow, who suffered extremely at times from chronic rheumatic gout. When one or the other of her joints was most affected, she had no asthmatic seizure. When the pain left her joints, and she could hobble around with comparative comfort and freedom, she was apt to have a regular asthmatic seizure during the night. Lately the pains in the joints have improved, there is no asthma, but she has suffered from marked trigeminal neuralgia. Relief was found in the use of lithia water, saline cathartics, and iodide of potassium with occasional small doses of colchicum.

Case VI. was that of a distinguished New York lawyer, about fifty years of age, a bachelor, who has been a gouty subject for a number of years. This patient returned from Europe only last autumn, after a cure at Homburg. He had been very abstemious in his diet, had taken a fair amount of exercise, and considered himself in very good trim. One afternoon, in walking up town, he was suddenly attacked with dyspnœa which lasted over half an hour, or until some time after he reached his own home. During several successive afternoons the difficulty of breathing recurred at about the same hour and disappeared spontaneously, but perhaps somewhat more slowly. He then consulted me. Upon examination of the chest, I found nothing to account for it.

With very little reason for treatment in anything I discovered, I gave him some anti-dyspeptic combination of drugs. This medication proved wholly useless. I examined his urine with a negative result. Patient was finally given colchicine and a saline aperient each morning. A few days later the dyspnœa had disappeared and patient felt entirely well. At this stage, however, the urine showed a heavy deposit of urates and a large amount of uric acid.

It is evident in this case that the *materies morbi*, instead of acting on the joints, or on the skin, produced an irritation of the nerves of respiration and thus caused dyspnœa. It might have caused, as I have occasionally seen it do, coryza, or more extensive congestion of the upper air tract. Here we should recognize in the asthmatic development merely the symptom of a constitutional disease, which may manifest itself in a variety of ways. Gout and asthma are certainly, at times, both results of a common cause. As yet I am not aware that there is any recorded case in which the characteristic deposit of urate of soda has been found in the lungs, but if it were so, it is probable that it would produce an effect in some sense similar to what it does in the joints.

I may very properly approximate with the preceding those more frequent cases of true peptic asthma in which the gastric filaments of the pneumogastric nerve are irritated immediately by the ingesta, and this irritation is propagated reflexly to the pulmonary filaments and produces through them bronchial contractions (Salter). I have met with more than one such instance during the past winter. The following case is an illustration:

Case VII.—C. A. B., forty-three, single, waiter, was admitted to St. Luke's Hospital, November 21, 1888. Intermittent fever six years previously. Latterly has suffered a great deal from asthmatic attacks. *No nasal obstruction.* "Shortness of breath and cough, especially in the morning, is all patient complains of." Sibilant and sonorous râles in chest, tongue heavily coated with thick fur. Prescribed mixture rhei et soda, and in a few days gastritis was cured and asthma had nearly disappeared.

Case VIII.—J. P., forty-five years, clerk, came to New York Hospital on November 5, 1888. Complains of having asthma during past seven years. Has constriction of the chest most of the time, but is decidedly worse at night than during the day. Excessive beer-drinking seems to occasion asthma, and yet the condition of the stomach does not give the patient any concern. Asthma is also aggravated by cold and damp weather. Patient never consulted a physician, but usually has been taken care of by a druggist. Both nasal passages free, and feels well except for asthma. Asthmatic attacks as severe as formerly. Physical examination reveals in front and posteriorly over chest, sibilant and sonorous râles everywhere, heart normal, considerable area of dulness to left of vertebral column. This patient was advised to stop beer-drinking and given a carminative. His asthma improved. He was also ordered a blister of cantharides to be placed between the shoulders posteriorly over the dull area, 3½ in. by 4 in. This blister also proved to be very useful in alleviating the dyspnœic attack.

I am of opinion that this case was one of *peptic* and *bronchitic* asthma combined. No doubt the engorged peritracheal glands accounted for the area of dulness and were slightly diminished in size by the application of the blister—thus taking off pressure from the pneumogastric nerve trunk.

A case of the latter kind is the following:

Case IX.—H. D., thirteen years old, schoolboy, who came to the New York Hospital on October 8, 1888. He had been ill three months—suffering from cough, expectoration, dyspnœa, which became orthopnœa at night. When first seen a blister was applied between the shoulders. The blister did not raise the skin very much and was only of slight benefit.

Boy stated on October 18th that he had suffered from asthma since he was two years of age. He had been two years in New York; before he was in Ireland. When he was three months old he had a rash all over the body and on the head. He was told it was eczema. It lasted seven years. His asthma has improved somewhat since he came to the United States. Has taken cod-liver oil, quinine, Irish moss, etc., without much benefit, although at one time he suffered from chills and fever. During one month past his breathing at night has been very bad. *No nasal obstruction.* Cough and dyspnœa occur about 4 A. M., and last several hours. Damp and cold weather aggravate his condition.

Physical examination shows emphysema on both sides anteriorly. Sibilant and sonorous râles everywhere anteriorly, and in different regions posteriorly. On percussion a very considerable area of dulness is found to the right of the vertebral column, extending from the spine of the scapula to lower angle of it. Ordered fly blister, to be repeated several times at suitable intervals.

Oct. 26th.—Boy returned. Is feeling very well. Cough ceased immediately after application of the blister. Breathes perfectly. He was never relieved by any medicine as much as by the blister. Previously and subsequently this boy was given iodide of potassium, which also relieved him somewhat, but the blister had the most marked effect for good.

Lad continued well until December 22, 1888, when he had a recurrence of pain in chest, cough, and great oppression. He believes he caught cold, which precipitated his attack. Same treatment advised as previously.

This case, in my judgment, is one of those in which the asthma seems due to direct irritation of the pneumogastric nerve by enlarged bronchial glands. In these cases the iodides are of unquestionable benefit, and may be given advantageously not only during, but between, the dyspnœic attacks. Unfortunately, their use does not ward off their recurrence invariably, nor, indeed, always mitigate greatly their severity. Whenever there is much complicating chronic bronchitis, it is in these instances that I have most satisfaction from their use. If any plausible theory can be given of their utility, it would seem to be mainly in their power of promoting the reabsorption "of cellular exudates into inflamed tissues."[1]

[1] Journ. of Amer. Med. Assoc., May 25, 1889, p. 729.

Williams[1] favors the use of the iodide of potassium, and believes its beneficial action consists in the reduction of the enlarged glands through the influence of the iodine. The indications for prescribing this remedy are, according to him, (1) the absence of catarrh, (2) the well-marked presence of the neurotic element, (3) the detection of dulness along the right or left edge of the first portion of the sternum, or in both interscapular regions, showing enlargement of the bronchial glands. He combines arsenic at times with iodide of potassium with great advantage to the patient. The great value of iodide of potassium in the treatment of asthma has been confirmed within a few years by Lazarus and Lublinski,[2] the latter regarding it as a specific in this affection.

In several cases of extreme dyspnœa in which the lungs were apparently normal, and yet the patient could not support the recumbent posture, Andral has found enlarged bronchial glands pressing upon the pneumogastric and pleuric nerves. He therefore affirms that such a condition may be a frequent, if not a constant, cause of asthma. The observation is probably correct, although, according to Berkart, the inference is not so, since we sometimes find the pneumogastric nerves imbedded in large bronchial glands, and yet no dyspnœa has been produced.[3] We know, however, that enlargement of these glands is no infrequent accompaniment of affections of the lungs, either at their surface or deeper in their structure. In many cases this enlargement follows upon the catarrhal pneumonia of whooping-cough and measles, and[4] diminishes or increases according to the amount of, or obstacles to, the lymphatic current. Other changes than mere hypertrophy of these glands will doubtless depend greatly upon the constitutional tendencies of the individual. Although the enlargement of the bronchial glands diminishes with the subsidence of the inflammatory process which occasioned it, it seldom disappears entirely. It is especially in scrofulous patients where we find the greatest tendency to enlargement of these glands, and the slightest irritation may become an efficient cause of it. Cruveilhier[5] has found these enlarged glands repeatedly deep in the structure of apparently healthy lungs. The bronchi are often flattened by them. Now, then, if an inflammatory process of the air-tubes takes place, the latter may become greatly obstructed. This glandular enlargement was formerly supposed only to explain the intermittent dyspnœa of childhood. It is now known that it frequently occurs in adult life,

[1] Amer. Journ Med. Sciences, August, 1888.

[2] Berl. klin. Wochenschr., 1887.

[3] Loc. cit., p. 21.

[4] N. Gueneau de Mussy, "Etudes Cliniques sur la Coqueluche." L'Union Méd., Nos. 81 and 85.

[5] Traité d'Anatomie pathologique, t. iv., 1862, p. 640.

and will thus account for many cases of asthma which otherwise are very obscure in their origin.[1]

With respect to children, Baréty[2] says that every time a child is attacked with dyspnœa resembling an asthmatic attack, we should not neglect to examine it carefully, and see if we can discover this form of adenopathy. Rilliet and Barthez, indeed, declare never to have observed nervous asthma in children. In all cases where they have observed continuous or intermittent dyspnœa they have found changes in the lungs, bronchi, or in the bronchial secretions.

The enlargement of the bronchial glands can rarely be discovered by percussion over the sternum, or between the scapula. But inasmuch as they serve to impede the entrance of air into the lungs, there is generally complete absence of respiratory sounds after cough as well as after manual compression of the chest. These symptoms are usually observed only on one side of the chest, whilst on the other side the different catarrhal rhonchi can be distinctly heard. Glandular enlargement in the neck, or in the supra-clavicular region on the side where the chest obstruction exists, are of great diagnostic importance.[3] The seeming integrity, however, of the thoracic organs is no sufficient reason why the cause of the asthma may not be found in the presence of glandular enlargement around the trachea or bronchi. This supposition is strengthened by the existence of bronchitis or emphysema.

For Rilliet and Barthez, the disease which offers the greatest resemblance with ganglionary asthma is intermittent, sibilant bronchitis. In the latter case, however, the sibilant râles are more acute and general, and in the interval between the attacks the general health is unaffected, and shows none of the signs of a grave or permanent alteration. Finally, the disease begins and ends like bronchitis.

Hyde Salter appears, also, to regard the swelling of the bronchial glands as a very frequent accompaniment of the bronchial inflammation to which eighty per cent. of all cases of asthma are traceable. Pressure on the vagi and their branches may result from this condition. To their effect on such glands is probably due the wonderful efficacy of iodides in asthma (*Amer. Journ. Med. Sci.*, 1888, vol. xcvi. p. 129).

In all cases of asthma of adult life it is important to examine the urine and see that it is healthy and free from albumin, so that we may not unwittingly have to do with an asthmatic attack which is merely a uræmic manifestation. In these cases, usually, œdema of the lungs is present. Of course, in view of our lately acquired knowledge, the larynx, and especially the nose, must be examined, to see that they are free from disease or from obstructive conditions.

I may now properly consider briefly my own experience of the importance of the nasal factor in the etiology of asthma. Since last autumn I have seen and treated about thirty cases of asthma due to different causes. Amongst these there were six in whom the asthma might be fairly ascribed to the existence of intra-nasal obstruction. Of these six cases, five were due to hypertrophy of the turbinated bodies in conjunction with more or less deviation and thickening of the nasal septum. The sixth case was one of mucous polyp. In all six cases operations on the nasal passages were undertaken. The nose was rendered pervious, and the patients experienced much comfort as a result of the operations. As regards the effect on the asthma, it was noted that in four cases the asthma was at least temporarily improved. In two cases there was no marked relief.

As will be noted in the histories previously reported in this paper, there were many cases in which asthma existed, and yet at no time was there any appreciable nasal obstruction. Further, I have seen a large number of cases, several of which I have operated upon successfully, in which there was pronounced nasal occlusion, and at no time had there been the slightest tendency to asthma. These facts, I regret to say, are not wholly in accordance with the statement of Dr. Bosworth, who, it will be remembered, presented a most interesting record of his experience at the meeting of this Association in Washington, last September. According to Bosworth:

"The existence of nasal disease was found to be present in every case in sufficient degree to warrant the conclusion that it exercised a powerful causative influence in the production of the asthmatic attacks."

The proof that this view is correct is shown, he says:

"in the fact that, of eighty cases, forty-six were cured, twenty-six were improved, three unimproved, and five unknown, and this entirely as the result of treatment of the nasal disorder. The inference," Dr. Bosworth adds, "can safely be drawn that, if the attack of asthma is cured by curing the nasal disorder, the asthma was caused by the nasal disorder."[1]

Dr. Shurly, I think, answered Dr. Bosworth's statement very successfully when he said that

"daily experience overwhelmingly shows a very large number of cases of intra-nasal disease in persons of neurotic habit, with a very small proportion of cases of associated asthma."

"We are going much too far," says Dr. A. H. Smith,[2] "when we seek to establish it as a rule that asthma is to be cured by operative procedures within the nose." As Dr. Daly affirms, it is unquestionably true "that there is

[1] N. Gueneau de Mussy, "Adenopathie Bronchique." Clinique Médicale, t. i, Paris, 1874, p. 569, et seq.
De l'Adenopathie Trachéo-bronchique. By A. Baréty. Paris, 1874.
[2] Loc. cit., p. 231. [3] Berkart, loc. cit., p. 202.

[1] Trans. Amer. Climat. Assoc., September, 1888, p. 181.
[2] Loc. cit., p. 192.

a certain proportion of cases of asthma that can be cured by putting the naso-pharynx in a healthful condition."

And it is also true that some *cases of asthma* can be cured solely through the instrumentality of the cautery, the saw, the rongeur forceps, or the nasal trephine. As a case illustrative, however, of the negative effects of the latter treatment, I would report the following:

Case X.—P. C., laborer, sixty-one years old. During the past four years, or more, has suffered from cough, expectoration, dyspnœa, lumbar and chest pains. Patient cannot sleep in recumbent posture and has a paroxysmal attack each morning of cough and wheezing. On account of physicians' statements he attributes most of his symptoms to his nasal deformity—which was unsuccessfully operated on, the first time, two months ago, by a prominent specialist of New York, by means of the nasal saw; a portion of the septum was removed at that time. Some weeks later a second operation was performed on the same nasal passage with Jarvis' rongeur forceps. Since these operations patient can breathe more freely through the nose; still the asthmatic attacks are unimproved and patient is a great sufferer. On examination of the nasal passages, I find atrophic rhinitis, but very slight obstruction on either side. In questioning patient closely I find a distinct history of constitutional syphilis. I could not determine in this case what physical condition produced the asthmatic attacks, but was at least confident that the intra-nasal condition had little or nothing to do with it. Anti-syphilitic and symptomatic treatment were tried with little good result. Patient disappeared after two weeks' treatment.

Still it is true that the condition of the nasal passages demands a considerable share of attention in the judicious management of asthma. It is also obvious that the permeability of the nasal passages is essential in order that the function of respiration may be carried on properly, and that the respiratory surface may be protected, and especially against the evil effects of constant or intermittent mouth-breathing. In the latter case the lungs do not receive a proper supply of air, and this fact may be corroborated by listening to the chest of one who alternately breathes through the mouth and the nose. Moreover, the nose is a filtering apparatus, besides providing the proper amount of moisture to the inspired current of air, and if it be interfered with, the foreign bodies floating in the atmosphere, instead of being arrested on its lubricated vibrissæ, penetrate directly into the lungs and cause, necessarily, irritation and distress. Therefore, whenever an operation is required to render the nose permeable, and particularly so when there is a tendency to, or confirmed, asthma, it should not, if possible, be delayed or neglected.

Frequently, however, the nasal occlusion is due to a congestion of the pituitary membrane, which in these cases may be greatly diminished or wholly relieved by the medicinal agents which are employed for the purpose of restoring the freedom of the pulmonary circulation. Again, crusts, scabs, mucus, accumulate in the nasal passages at times, and promote an inflammatory process which can be temporarily relieved by a suitably formulated spray. I have known the hyper-sensitiveness of the pituitary membrane to be greatly diminished at times by repeated applications of carbolic acid with glycerine and vaseline. Indeed, in this way, I remember two cases of asthma of nasal origin, in which I effected a temporary cure.

To show the differences of opinion in regard to the intra-nasal treatment of asthma, and particularly by cauterization, I would add, that in the discussion following the reading of Lazarus' paper on this disease, at the Berlin Medical Society, "the general consensus of medical opinion seemed to be that the number of cases in which asthma was benefited by cauterizing the nasal mucous membrane on the turbinated bones, was extremely small." [1]

In summing up this subject I will quote, with some modifications, from a paper written by myself and read in 1886 before the New York Academy of Medicine.[2]

There are, without doubt, a great number and variety of affections, mainly neuroses, under the direct influence of morbid intra-nasal conditions; still, at the present time we should be careful not to exaggerate their importance, and whenever and wherever we find a neurosis of the respiratory organs immediately reach the conclusion that the nose occasions it. There is much truth in the observations of the past few years in regard to the predominating influence of a hyper-sensitive nose, but there is also a tendency to exaggeration in this regard, and we should be careful to exclude other efficient causes of *asthma* before admitting the nasal origin and instituting severe or prolonged treatment of this organ with a view to cure the *possible* secondary affection. The nose is naturally a sensitive organ, and many times I have produced epiphora, cough, spasmodic closure of the glottis moderate in amount, and slight dyspnœa, by the mere passage of instruments, or simple nasal examinations, when the result of my investigation was to show that no nasal trouble of importance existed. This is no new observation and I am conscious that all are familiar with it.

In reading the histories of clinical cases, we shall be disposed to take a one-sided view unless we secure the sobering influence which comes from extensive reading and larger experience. The only way, I believe, in which we can avoid error at present in

[1] Annual of the Universal Med. Sc., 1888.

[2] Respiratory Neuroses of Nasal Origin, N. Y. Med. Rec., p. 119, 1886.

this seductive question, is to search carefully for other cause, or causes, of asthma, and when none are discovered, then, and then only, we should admit the nasal origin of the neurosis, and institute treatment in accordance with this conviction. I agree entirely with Lublinski, who says: "If there is really a nasal affection, it should be treated according to its character, and not on any far-fetched theory of its etiological importance" (*Med. Rec.*, May 27, 1887). This being my opinion, I must reluctantly separate myself from any such radical position as that upheld by my eminent colleague, Dr. F. H. Bosworth, of New York, who writes that he has seen no case in which intra-nasal disease was not found as a predisposing cause of asthma. And again, to quote him textually, he has "never known a case of asthma to occur in other than an obstructive lesion of the nose or upper air-passages."[1]

Another form of asthma, which, to me, is rare and interesting, was recently seen by me at my office.

The history is as follows:

Case XI.—J. K., forty-nine years old, married, Swiss, laboring man, has always suffered from pains in the head and oppression on chest. Patient has noticed when pain in the head disappears his feeling of oppression in the chest becomes worse. This oppression is accompanied with occasional dry cough. The suffering from the oppression is most severe during the night. During the day, as a rule, he does not suffer much. Patient is awakened frequently during the night with attacks of difficult breathing. He is often constipated, and has nausea and vomiting, but the cephalalgia is the symptom which is most distressing.

Physical examination shows a large head with prominent, square forehead. Such a conformation of the cranium existed as we find in children suffering from moderate hydrocephalus with rickets. Patient remarked that he was said to have had a remarkably large head when a boy, and he remembers distinctly having had for many years as a youth profuse cranial sweating. His legs are moderately straight, but the general appearance of the man is delicate and slight. The lungs show probable fibroid induration, yet patient states that he has not coughed during the past winter. Often he awakes with difficulty of breathing at night when he has no cough at all. Dulness over right interscapular region.

Diagnosis was: Old rickets, with probable hydrocephalus leading to cerebral irritation, which condition is the cause of asthmatic attacks in a patient made additionally susceptible by the existence of a fibroid lung. The gastric catarrh and paresis of the lower bowel appeared to me of the nature of concomitant symptoms of the preceding conditions. Patient is coughing somewhat to-day, without expectoration. He is suffering from his head, and has notable difficulty of breathing. Upon close questioning anew, again patient insists that since childhood he has always found that his head pain originated the asthmatic seizures, although when the head became decidedly better the asthmatic attack grew rapidly more *intense and distressing*. Whilst the patient was in my office I administered a considerable dose of bromo-caffeine, and within fifteen minutes after taking it his pain in head, difficulty in breathing, and cough were all almost entirely relieved. I ordered him to continue bromo-caffeine at proper intervals during twenty-four hours. Next day patient returned to my office and said he was decidedly better in every way—head less painful, no difficulty of breathing, and scarcely any cough. Thinking the patient needed building up, and that his bowels required attention, I ordered syr. hypophosph. comp. and a vegetable cathartic pill.

This case approximates somewhat, I believe, those described by Paulet[1] as epileptic asthma,

> "who believes this form merits the name of epileptic neurosis of the gastro-pulmonary filaments of the vagus nerve. It is characterized by varying paroxysms succeeded by health. In many instances these attacks are preceded by *pain in the head* comparable to an epileptic aura. They come on during the day, and vomiting is a frequent symptom. It is a peculiarity of the affection that it is not improved by the routine treatment of asthma, but is successfully combated by that of epilepsy."[2]

This guides to a new line of treatment which has marvellous efficacy—*i.e.*, the use according to Paulet of large doses of bromide of potash combined with picrotoxine and soda.

This author states that the paroxysms were almost entirely suppressed at one stroke; but a single attack occurred at the end of ten days. Certainly my isolated case bears out the possibility of such a result.

In conclusion, I would say that I have not alluded to those very frequent cases of asthma—in fact, we may call them the usual ones—which are dependent upon old bronchial catarrh, accompanied by emphysema and more or less chronic changes in the cellular structure of the lungs. I have abstained from this because my paper is already unduly long, and because this interesting topic may be reserved for ulterior consideration.

[1] Amer. Journ. Med. Sciences, Sept., 1888, p. 256.

THE PREVENTION AND ARREST OF PUERPERAL MASTITIS AND ABSCESS BY METHODICAL FRICTIONS.[3]

By EUGENE F. CORDELL, M.D.,
of Baltimore

As might be inferred, an organ which is subject to such alterations of complete dormancy and unintermitting function, and to such frequent traumatism, as the female mamma, is exceedingly liable to disorder and disease, and especially to disturbance and

[1] Journal de Médecine de Paris, Feb. 19, 1888.

[2] Annual of the Universal Med. Sc., vol. i., A. 79, 1889.

[3] Read before the Clinical Society of Maryland, May 17, 1889.

arrest of function. Whilst there is not complete agreement as to the causes and mode of origin of puerperal mastitis, most writers assign the greatest consequence to those circumstances which—as affections of the nipple—may be supposed to interfere with the due discharge of the milk. Fissures and ulcers of the nipple are considered by far the most active etiological factors (Playfair, Lusk, Spiegelberg, Parvin, Charpentier, and Gallabin), whilst cold, pressure, injuries, depressing emotions, general septic infection, the breast pump, imperfect development of the nipples, etc., play an altogether secondary rôle.

It is not difficult to comprehend how the group of affections first named may interfere with excretion, and, secondarily, also with secretion. They are exceedingly painful, and the attempt at nursing being usually persisted in, they not only have no chance to heal, but often become greatly aggravated by the constant traction due to suckling. The intense suffering to which the mother is thus subjected, no matter how great her maternal instinct and resolution, inevitably leads her to avoid, as much as possible, the painful ordeal. In consequence, the milk accumulates in the tubes, forms clots, and the flow ceases for the time. This is not all: it also undergoes the lactic acid fermentation, and, compressing the bloodvessels, leads to engorgement and hyperæmia, and their natural sequence—arrest of secretion. Paresis of the muscular fibres entering into the walls of the milk-ducts must play some part in the disorder here, as in other hollow organs of the body which are subjected to undue distention from accumulation of their contents.

This is not all that we can say of the etiology of these mammary troubles. Analogy and late researches have indicated that there are silent and invisible excavators at work, and that it is by means of the microscope that the etiological problem must be solved. Of the latest standard authors who have been accessible to me, but one as yet alludes to the direct introduction of septic matter. "In almost all cases," says Parvin (*Obstetrics*), "a lymphangitis arises from the introduction of septic matter through a wound on the nipple, beginning by a crack, fissure, erysipelas, etc." The following investigations bearing upon the bacteriological aspect of the question are upon record: Bumm (*Arch. f. Gyn.*, xxvii. p. 460, and *Amer. Journ. Med. Sci.*, 1886) found two kinds of cocci in mammary abscess, the "staphylococcus pyogenes aureus" and the "streptococcus pyogenes." The former grew readily upon almost any nutritive soil, but the latter was not so easy to cultivate, and formed smaller and more delicate colonies. Of fifteen cases in which the cocci were discovered, the staphylococcus was present in eleven and the streptococcus in four. He believes that these organisms directly induce phlegmonous inflammation by their growth and proliferation, the abscess beginning in the case of the staphylococcus with deep-seated inflammation spreading outwardly to the surface, whilst that due to the streptococcus usually begins with superficial inflammation extending to the deeper parts. The starting-point of the infection is usually an abrasion of the cuticle, although it occasionally travels up the milk-ducts. He also found similar organisms in milk just drawn, but not in all specimens from the same breast. He concludes that there is danger in allowing the milk to stagnate in the mammary glands.

Olshausen (*Deutsche med. Wochenschrift*, April 5, 1888, and last edition of Schröder, *Amer. Journ. of the Med. Sci.*, 1888) confirms entirely the statements of Bumm, and adds that the decomposition and acid fermentation of milk are produced by bacteria; and, on the other hand, the development and extension of the latter are favored by the former. Escherich (as quoted by Olshausen) appears to have made observations of a similar purport; and, finally, E. Cohn (*Zeitschr. f. Geb. und Gyn.*, xi., 2; *Amer. Journ. Obstet.*, 1886) found the same pyogenic cocci in seven out of eight cases, leading him to conclude that mastitis does not result from milk retention in the absence of the specific microörganisms. These investigations seem to leave but little doubt that the true solution of this question has at last been found.

When we come to the prevention and treatment of mammary inflammation, we find still greater disagreement. Some, as Mundé (*Cazeaux and Tarnier's Obstet.*, 8th Amer. Ed., Philada., 1889) and Harris (quoted by Parvin, *Obstetrics*, Philada., 1886), rely upon compression and rest; "rest," says Harris, "from passive motion, rest from secretion, rest from pain." "*No rubbing or manipulation* of the breast is allowed under *any* circumstances," says the former; whilst the latter interdicts nursing, friction, pumping, fomentations, and all local means except those designed to secure rest.

All are not of this opinion with reference to the harmful effects of friction. Playfair, for instance (4th Amer. Ed.), recommends "gentle hand friction" to remove "engorgement of ducts." Lusk (*Midwifery*, New York, 1887) allows that "partial relief to excessive fulness of the milk ducts" may be secured by mammary expression; and Barnes (*Med. and Surg. Obstetrics*, Philada., 1885) says that frictions during the engorgement which precedes inflammation are useful to promote secretion and help retarded milk along the ducts, but cautions that they should be gentle and light, for if injudicious they may become the cause of inflammation.

Notwithstanding the objections made by such high authorities as I have cited, the method of treatment by frictions seems to me to commend itself not only upon rational grounds, but also by the results of experience. The accessibility of the glands and the

anatomical arrangement of the ducts, converging, as they do, from the periphery toward a common centre, and from smaller tubes to larger, enables us to employ pressure with the very best effect. By softening the clots and propelling onward the stagnant and fermenting milk we relieve the pressure, irritation, and pain, and facilitate the subsequent excretion of the retained material. Furthermore, we propel this material in a direction by which its removal alone can be effected. Again, by getting rid of it, either by the natural method of suckling, or by artificial means, we empty the overloaded ducts, we remove pressure upon the bloodvessels and nerves, diminish vascular engorgement, and undoubtedly favor the proper secreting functions of the organ. And, finally, if it be true that microorganisms are at the bottom of the morbid process, what other means are left open to us for eliminating or getting rid of these but by thus depleting the organ by channels which nature has provided?

Clinical experience, the ultimate test of all therapeutic measures, offers still stronger proofs of the value of this method. Many and many is the time I have seen a swollen, engorged, and exquisitely tender breast restored to its natural condition by a few gentle rubbings. I have seen the same result ensue when a violent chill, intense fever, profuse sweating, and an angry-looking discoloration seemed to point to inevitable abscess. So that my confidence in my ability to check the commencing inflammation is now so great that I feel perfectly certain of a favorable result; and since I began the use of frictions, some sixteen or eighteen years ago, I have not seen a single case of parenchymatous abscess, and only one small subcutaneous collection of pus, whilst during previous years I can recall several very painful and protracted cases, involving great suffering and helplessness, demanding deep incisions, and sometimes rendering a breast useless ever after.

There is such almost unvarying uniformity about cases that I will only cite the two following as typical of my clinical experience:

S. C., multipara, nursing an eight-months child. For two days the baby has had a bad cold and has not been able to take the breast. Consequently the milk has ceased flowing and the breast has become sore. That afternoon she had a severe chill. At 8 P.M. she was still chilly, temperature, 103°; pulse, 108. Breast exceedingly tender and the seat of severe pains extending down the left side with "cramps." Also severe head and back ache. I ordered strict confinement to bed, and support by means of a folded handkerchief; gave a dose of quinine and morphia and directed the breast to be gently rubbed every six hours, from the circumference to the nipple, with warm oil and laudanum, equal parts. The next day I was surprised to find her attending to her household duties, going up and down stairs, her fever gone entirely and the pain and tenderness much diminished. She continued the rubbings a short time longer, but had no further need of my services.

A. H., nursing multipara, aged thirty-three. Two days after experiencing a severe chill, her left breast was exquisitely tender and painful and greatly swollen. There was a red and angry-looking spot, some one and a half inches in circumference, on the upper and inner surface of the gland. Warm oil and laudanum frictions were ordered and faithfully applied and she took a dose of salts. After two days the breast was softer, less heavy and painful. She had no further chill, and in a day or two was as well as usual.

Whilst I rely upon the frictions to restore the crippled organ to its full integrity, I am not willing to dispense with such additional measures as may seem to be useful in aiding in this restoration or in alleviating their discomfort. Hence, I enjoin complete rest, and support by means of a handkerchief tied over the opposite shoulder. A dose of salts is rationally indicated, and anodynes may be demanded. The value of quinine, aconite, belladonna, iodine, and other agents, recommended by many, is conjectural. It is important, for reasons which I have stated, that the milk should be drawn from the ducts, and hence nursing should be continued if possible, as the natural effort of sucking is the most effectual way of drawing the milk. In case of fissure or ulcer of the nipple, it may be rendered less painful by the use of a "Phœnix" nipple-shield.

Circumstances may arise rendering it necessary to have the milk drawn by the husband or nurse, or by a breast pump, although I have had but little satisfaction from the use of the latter. I do not share in the opinion of Jacobus, of New York (*American Journal of Obstetrics*, 1883), that it is about as rational to attempt to draw out the contents of a boil by suction as it is to extract those of an inflamed breast.

Of course, affections of the nipple demand appropriate applications and the utmost cleanliness, and some disinfectant, as borax and sugar, equal parts, should be applied to the infant's mouth before nursing.

In this communication, I do not wish to be understood as asserting that the method which I have advocated, and which is not at all original with me, is the only one by which mammary inflammation and abscess may be prevented or arrested. But, I do believe, that it is one by which those results may be attained with a very great degree of certainty, and even allowing that other things are equal, it strongly recommends itself by its simplicity and ease of application. Acting, therefore, upon the suggestion of one of the most eminent of English clinicians—Dr. Thomas King Chambers—I do not

consider it necessary to retain in my medical armory, to be used for that same purpose, the less efficient measures which it has superseded.

2111 MARYLAND AVE., BALTIMORE.

REMARKS ON THE TREATMENT OF PULMONARY PHTHISIS.[1]

BY J. C. WILSON, M.D.,
OF PHILADELPHIA,
LECTURER ON PHYSICAL DIAGNOSIS, JEFFERSON MEDICAL COLLEGE, ETC.

UNTIL the present decade, no theory adequate to explain the facts in regard to the origin and nature of the tuberculous diseases, and especially of pulmonary phthisis, had been advanced. One hypothesis after another had been advocated only to be abandoned, leaving a heritage of erroneous views and misleading phrases to encumber the general stock of information. Pathologists, in their eagerness to cope with the most grievous scourge of modern civilized life, generalized upon insufficient data. The progress of knowledge in regard to this group of diseases was, therefore, slow and halting. It consisted chiefly in the accumulation of facts, among which there can be found neither coherence nor relation. Many of these facts, collected with untold toil, are to-day without significance or value, except to overthrow the views for the support of which they were gathered. When all was said, it seemed as though the progress from the time of Laennec to 1882 was scarcely worth mentioning. To-day it appears to many of us to have been no progress at all.

Koch's discovery of the tubercle bacillus, and his demonstration of its causal relation to the tuberculous diseases, mark an epoch in medical history. Since that time scientific research has taken the place of ingenious surmise, and the evolution of a theory constantly supported by new and interdependent facts has gradually illuminated the darkness that overspread the subject of tuberculosis. It is true that there are yet obscure corners and unsolved problems. The present is a period of transition. But the confusion of the present has this advantage over the chaos of the past: there is a hopeful prospect that out of it will evolve order.

Let us regard pulmonary consumption in all its forms as a type of the tuberculous diseases.

This much may be safely predicated:

Pulmonary consumption is an infectious disease, due to the implantation and development of the tubercle bacillus in the lungs of a susceptible individual.

It is of advantage to present this proposition in its simplest form. It follows that the tuberculous diseases of other organs are infections, likewise due to the access and development of the tubercle bacillus. The pathogenic unity of the tuberculous diseases and the primary localization of the process are obvious deductions. The overflow of local collections of tubercle bacilli, or of matters laden with them, by way of continuous surfaces or perforating lesions, explains the extension or the generalization of the process; thus, for example, from one lobule to another, or to another lobe, or to the opposite lung, or to the larynx, or upon deglutition to the intestine, or, again, by the erosion of the capsule of a lymphatic gland, to a bronchus, or into a vein, with the production of acute general tuberculosis. But acute general tuberculosis is a rapidly fatal disease, presenting strong points of resemblance to the specific fevers, especially to enteric fever. Let us confine our attention to the local lung disease. If it be local, how are we to account for the constitutional symptoms?

The results of recent researches in the field of the chemistry of the infections render it in the highest degree probable that many of the general symptoms of these diseases are not directly, but only indirectly, due to the bacteria which constitute the infecting principle. Toxic substances—ptomaines—are continuously evolved during the period of the development of the pathogenic bacteria in the organism. These principles, being soluble in the circulating blood, occasion constitutional phenomena analogous to those caused by certain alkaloidal poisons. Several of these substances have been isolated.

The grave constitutional symptoms which are sometimes associated with circumscribed lesions, the general improvement frequently observed during periods of quiescence on the part of the local process, the disappearance of symptoms in cases where the local process becomes obsolescent, the prolonged fair health which is occasionally seen in individuals with extensive but distinctly encapsuled cavities, all lend support to the view that in pulmonary consumption likewise, not the bacillus itself, but ptomaines which it produces, are the cause of the malnutrition, asthenia, fever, sweating, and other general symptoms of the active disease. That these ptomaines are among the products of the disintegration of tissue elements from which the bacteria derive pabulum is obvious. To arrest such tissue-disintegration would mean, on the one hand, to prevent the formation of ptomaines; on the other, to deprive the parasite of the pabulum necessary to its growth.

The destruction of pathogenic bacteria outside the body, or the prevention of their access, constitutes prophylaxis. Where measures of this kind are efficient, the question of individual susceptibility or predisposition becomes of minor importance. When such measures are inadequate, the prophylaxis must include efforts to render the individual insusceptible,

[1] Read before the American Climatological Association, June 26, 1889.

efforts which have been fully realized by vaccination in smallpox.

In broad, general terms, disinfection includes two processes, which, however, are not in all instances distinctly separated, but which often overlap. These are,

1. The destruction of germs.
2. The sterilization of organic substances.

The first is a germicide process; the second, an antiseptic process. Measures of disinfection employed in the sick-room and in the treatment of the excreta of the sick are germicide. Here the object is the destruction of bacteria. The processes by which meats are preserved, as by smoking, salting, and the like, and the means taken to preserve pathological specimens and cadavera for anatomical use, are antiseptic. Here the purpose is, not to act directly upon the bacteria which may produce destructive changes, but to act upon substances liable to those changes in such a manner as to render them infertile for the growth of the bacteria.

Efforts have been made to utilize both these methods in the curative treatment of disease. In theory one or the other or both of them are available in the treatment of tuberculosis, a local infection gradually extending by the implication and destruction of new areas of tissue, the elements of which are necessary to the growth and development of the bacillus. Superficial tuberculosis is, under certain circumstances, amenable to germicide treatment in the simplest form. Thus the enucleation of superficial tuberculous lymphatic glands and the effectual scraping and disinfection of the surrounding tissues, now constitute an accepted and efficient treatment. The medical history of the last seven years teems with the records of unsuccessful efforts to utilize various germicide methods in the treatment of pulmonary consumption. The apparent early successes of several of these methods are to be explained, partly by the enthusiasm of those who have advocated them from the beginning, and partly by the fact that consumptive patients, especially when congregated together in hospitals, are liable to present misleading evidences of improvement for a short time after the employment of methods of treatment at once novel and having a specious appearance of being scientific. Their failure is due to the fact that the tubercle bacillus is more resistant to germicide substances than the tissues which constitute its natural habitat.

Even in the case of exposed tuberculous ulcers or of pulmonary cavities so situated as to be accessible to germicide drugs, either by inhalation or by direct injection through the chest wall, the bacilli in the surface discharges, or in the accessible curdy necrotic material collected upon the cavity walls, are no longer active in causing the tuberculous process. They are simply admixed with material ready to be thrown off, and are dangerous only in so far as they are liable, by transposition to unaffected tissues, to light up new local processes. The bacilli which are active are deeply imbedded in tissues inaccessible to any germicide which does not, at the same time, involve in destruction the parasite and the structures which constitute its host.

One germicide method only, and that the latest, has not yet been shown to be unsuccessful. It is the method of Weigert, and consists in the prolonged inhalation of superheated air. Whether or not the tissues of the human lung can preserve their integrity, when exposed to air of a temperature ranging from 212° F. to 480° F. sufficiently long to destroy the tubercle bacilli imbedded in them, remains to be demonstrated.

In the antiseptic plan we have a method of treatment likewise based upon the pathogenic rôle of the bacilli. This plan has for its object not to directly destroy the bacillus, but to augment the powers of resistance of the structures which it assails. If the tissue elements can be made to withstand the disintegrating action of the parasite, then the chemical changes by which are elaborated, on the one hand, the nutritive material needed for its growth, and, on the other, the poisons which cause the general symptoms of the disease, would be prevented. To this plan must be referred those methods of treatment which have been generally recognized as beneficial, including measures of hygiene, dietetics, with hyper-alimentation and the administration of fats, pulmonary gymnastics, and climate, the object held constantly in view being such an improvement in the general condition of the patient as to retard or bring wholly to an end the destructive processes in the lungs.

Among medicines, the utility of which has been long and generally recognized, are the preparations of iodine; the preparations of mercury; arsenic; the phenols, especially carbolic acid and creasote.

The members of this group have one striking peculiarity in common, namely, that they are powerful antiseptics. With the exception of the phenols, they belong to the group of medicines known as alteratives; and the question suggests itself, in this connection, as to whether or not their so-called alterative influence is not, to some extent at least, due to an influence which, in long-continued moderate doses, they exert upon the tissue elements of the body in such a way as to increase the powers of resistance of the latter to disintegrating morbific agencies.

Clinical researches in this direction are not without promise. Alteratives of this kind have hitherto been employed simply upon very vague opinions regarding their general influence upon nutrition. If they can be shown to exert a special influence upon nutrition antagonistic to the action of pathogenic bacteria, not only will their usefulness be much

increased, but clinical problems relating to the mode of administration, dosage, and effects, will at once engage the attention of practical therapeutists.

The existing methods of treatment are unsatisfactory. Germicide methods have proved utterly futile. The suggestion of an antisepsis that will increase the powers of resistance in the living tissues opens up a field worthy of systematic cultivation. Two things are especially needed: first, the earliest possible recognition of the local lesions of pulmonary consumption; second, the earliest possible employment of the combined means which have shown themselves in the hands, not of one, but of many practitioners to be useful. These are improved hygiene, dietetics, climate, respiratory gymnastics, and the use of alteratives.

The universal experience of those engaged in making large numbers of post-mortem examinations shows a frequency of obsolescent tuberculous lesions in the lungs, such as warrants a large degree of hope in the energetic treatment of the disease in the stage of primary infection. The conventional disregard of the earliest symptoms, both on the part of patients and physicians, is unfortunate. Far better for the doctor to tell the patient his worst fears at once, and institute the treatment at a time when the evidences of tuberculous infection are still doubtful, than to temporize until large areas of pulmonary tissue are implicated, and the growing parasite has become a fruitful source of new infection, both within and outside of the body of the patient.

SUPRAPUBIC CYSTOTOMY IN A CASE OF ENLARGED PROSTATE AND FALSE PASSAGE.

By M. STAMM, M.D.,
of Fremont, Ohio.

At the last meeting of German surgeons in Berlin, in speaking of the treatment of enlarged prostate, Fürstenheim mentioned a case occurring in the practice of Israel, which the latter surgeon presented to the Surgical Society of Berlin some time ago. This patient was a female and for some reason Israel punctured the bladder above the symphysis. This puncture resulted into a fistula through which the patient could empty her bladder by means of a catheter without any pain. Fürstenheim reasons from this case that a similar method, preferably an incision, might be adopted in cases of hypertrophy of the prostate where patients have great difficulty in introducing a catheter. Most surgeons seem to agree that it is not so much the enlarged prostate as the catarrhal condition of the bladder, which causes the real danger in such cases. In my opinion a suprapubic cystotomy would greatly reduce this danger and would admit of a thorough examination and irrigation, both of which cannot so well be accomplished by any other method.

The following case furnishes a result which Fürstenheim would expect from such a procedure.

C. C., of Kansas, Ohio, about seventy-five years of age, had been suffering from prostatic hypertrophy for several years and had to draw his urine by means of a silver catheter for a long time. On April 6, 1888, as he was not able to empty his bladder as before, he came to my office. Not finding me at home, and being in great agony, he went to some other physician, who, after protracted efforts, made a false passage, but did not succeed in getting any urine. In the morning of April 9th I was called in consultation with Dr. Jump, of Kansas, and found the bladder distended up to the umbilicus; scrotum and perineum were of a dark purple color, some spots showing already signs of gangrene. Every attempt to get into the bladder through the urethra was frustrated. Prostate examined per rectum seemed very much enlarged. As parts along the urethra were very much bruised and mortification appeared imminent, I decided to make a suprapubic incision. After having opened the bladder a very large quantity of urine mixed with some slime was emptied. The middle lobe of the prostate gland was of the size of an egg and acted as a valve upon the urethra, a considerable pocket of the bladder was also formed by it. The bladder was then stitched to the wound and a strip of iodoform gauze left in for drainage and as a disinfectant.

Patient rallied well from the operation, but his fever kept up for about one week until the bruised parts had sloughed off. About three weeks after the operation the opening had contracted so that a large-sized catheter could easily be introduced. I had a silver canula made after the shape of a tracheotomy tube, but patient found he could get along better without such a contrivance. He can now retain his urine for several hours, empties his bladder with a soft catheter through the fistula about six times a day and is better satisfied with his present condition than he had been for several years before the operation.

MEDICAL PROGRESS.

Chloralamid, a New Hypnotic.—While, at a first glance, it may seem quite superfluous to add another to the already long list of hypnotics, closer observation will show that this is not the case. Whilst, on the one hand, many lack promptness in action, on the other hand, many of those whose hypnotic action is rapid are accompanied by such grave symptoms that their use can only be resorted to with extreme caution. The actual number of reliable, efficient, and, at the same time, safe hypnotics, is very small. The introduction of a new one, which promises to combine the above-named desirable properties, should be joyfully welcomed rather than regarded as a superfluous addition.

Chloramid, as introduced by v. Mehring, is a product of anhydrate of chloral (CCl_3CHO) and formamid ($CHONH_2$) and therefore has the formula $CCl_3CH\begin{smallmatrix}OH\\NHCHO\end{smallmatrix}$. It is

a colorless crystaline substance, soluble in nine parts of water and in one and a half parts of alcohol (96 per cent.). Its taste is mild, slightly bitter, but not biting. The watery solution keeps well.

Dr. Ed. Reichmann reports quite a large number of cases in which he has used the drug; the dose given being almost invariably thirty grains. The hypnotic action was in all cases most prompt; sleep ensuing within an hour after the dose had been taken. No unpleasant accompanying or after effects were noted. The patients awoke the next morning refreshed and feeling as usual. Sphygmographic tracings were taken during the influence of the drug, but revealed nothing but normal heart action. Reichmann concludes that chloramid is a safe and rapidly acting hypnotic, when given in doses of thirty to forty-five grains. Sleep ensues in half to three-quarters of an hour, seldom later. Its rapidity of action is, therefore, equal to that of sulfonal.

The absence of all unpleasant accompanying or after symptoms, as well as the absence of any circulatory disturbances, will probably bring the drug into extensive use and make for it a place among the principal hypnotics.

A New Tubercle Bacillus.—We read in the *Gazette hebd. de Méd et de Chir.*, that Dr. J. Courmont claims to have found a new tubercle bacillus in a pleural lesion of an ox affected with tuberculosis. Cultures of this new bacillus, which is quite different in appearance from the tubercle bacillus of Koch, produced tuberculosis in from fifteen to twenty-five days when injected into rabbits. In the rabbits thus infected he found large quanties of the new bacillus, but Koch's tubercle bacillus was absent in every case. The new microbe was also found in the blood of the animals infected. It thrives well at a temperature of 97° F.

Experimental Study of Brown-Sequard's Theory.—An interesting article on the efficacy of Brown-Séquard's hypodermatic fluid appears in the *Medical Record* of August 24th, from the pen of Dr. Henry P. Loomis. Besides reporting in detail ten cases in which the liquid was used, Dr. Loomis has investigated critically the merits of the preparation. Careful antiseptic precautions were observed in all the experiments.

Dr. Loomis, whilst regretting that so much has been engrafted upon Brown-Séquard's theory that has no shadow of foundation in any contention of the originator, in which there is nothing to support the accusation that he claims to have discovered a source of perpetual youth, but rather a flat denial of any such contention.

The ten cases reported by Dr. Loomis are divided into two classes, the first including only such as were patients in the Bellevue Hospital, and who had no knowledge or suspicion of the character of the liquid; the second class embraces, with one exception, private cases. All were men of intelligence and education, and were familiar with the theory and method of treatment.

Dr. Loomis summarizes his observations as follows:

I. (*a*) He sees no reason to anticipate danger of septicæmia from the use of the fluid prepared under proper antiseptic precautions, provided the material used be absolutely fresh and free from all trace of disease. His attention was called to the necessity for the closest scrutiny in this last particular, by having discovered, in specimens taken from an apparently healthy ram, a solitary tubercle, in which were demonstrated tubercle bacilli. In none of the cases has he seen any bad results, and only in a few has there been a moderate amount of pain at the point of injection, lasting from six to eight hours.

(*b*) He can explain the singular nervous affection apparent in certain of the cases only on the theory that upon the nerve-centres the mixture exerts some powerful but as yet unexplained influence, which, even if its use be eventually proved beneficial in some cases, must render its employment in others a matter of caution. It is far from safe to say and proceed upon the belief that "if it does no good, it can do no harm."

II. (*a*) He seems to see in almost all the cases of *old men* subjected to the experiment an increase in strength and vitality which certainly persists for several days. He has noticed nothing in the least resembling the secondary depression which so commonly follows the use of ordinary stimulants.

(*b*) When used in cases of actual disease no modification of pathological conditions or processes has been recognizable.

He, therefore, concludes:

1. That the injection of this testicular mixture does, as claimed, produce "nutritive modification" in the tissues of elderly men, due probably to the stimulation of the nerve-centres.

2. As far as his own experiments are concerned, sufficient time has not yet elapsed to justify an affirmation or denial of the correctness of Dr. Brown-Séquard's second conclusion.

3. There is in the theory sufficient ground for further experimentation.

Bromoform in Whooping-cough.—The number of remedies used and recommended in whooping-cough is very large; still new ones are continually cropping up. This proves that among existing drugs there has been no perfectly satisfactory remedy for this disease. Carbolic acid, for inhalation in the shape of vapor, and quinine given internally, are therapeutic methods in which the greatest confidence has been placed. Lately that hard-worked drug, antipyrin, was also called upon to act specifically in this disease. After trying vainly to fulfil the requirements imposed upon it, antipyrin is quietly withdrawing from the field. Chloroform in small doses, given internally, has also given considerable satisfaction, and it was this fact that called Dr. Stepp's attention to the possible utility of bromoform in whooping-cough.

Bromoform is a clear, colorless fluid, having a peculiar, although not an unpleasant, odor. Its chemical composition is $CHBr_3$, specific weight 2.9—therefore, is twice as heavy as chloroform. It is easily soluble in alcohol, but very slightly so in water, seven or eight drops dissolving in four fluidounces of water only after continual shaking. If well corked, bromoform water will keep indefinitely. Pure bromoform has a sweet taste, and does not burn the mucous membrane of the mouth, as chloroform. When evaporated over a lamp it gives off strong bromic fumes, which are intensely irritating to the mucous membranes of the conjunctiva, throat, and nose. It seems to be more volatile than chloroform. When given internally no unpleasant accompanying symptoms were observed, either in adults

or children; Stepp maintains that the drug is not poisonous. No influence either upon the pulse or temperature was noted. The dose *pro die* for children was five to twenty drops of bromoform in four to four and one-half ounces of liquid. Owing to its poor solubility in water, the following formula is advised:

℞.—Bromoform	. . .	gtt. x.
Alcohol	. . . .	f℥j to f℥jss.
Water	. . . .	f℥jv.
Syrup	. . . .	f℥iij. —M.

This may be given in teaspoonful doses every one or two hours, as necessary. Stepp, in the *Deutsche med. Wochenschr.* for August 1st, reports nearly seventy cases of whooping-cough which he has treated successfully with this remedy. Dr. Goldschmidt cured a severe case which was complicated by pneumonia, in two weeks by its use.

A remarkable feature of the treatment is that no catarrhal symptoms are present during its use, and in cases where such had existed, they speedily disappeared. Stepp says that experience has taught him that the size of the dose should be in direct proportion to the age of the patient and to the intensity of the attack. He shortly intends to publish an exhaustive dissertation on the subject. The ease of administration, and absence of unpleasant accompanying symptoms, aside from the beneficial action which is claimed for it, surely warrant its trial by the profession.

Prophylactic Hair-wash.—The following hair-wash, given in the *Therapeutische Monatsheft* for July, 1889, is said to keep the scalp cool and the hair dry and free from oil, also to prevent dandruff, besides being a most agreeable toilet preparation:

℞.—Spirit of ether	. .	f℥jss
Tincture of benzoin	. .	f℥jss to f℥ij
Vaniline	. . . .	♏j
Heliotropine	. . .	♏iij
Geranium oil	. . .	gtt. j.—M.

Sig. For hair-wash. Keep well corked and do not expose to flame, as the mixture is highly inflammable.

The late Typhoid Epidemic in Berlin.—DR. FÜRBRINGER, the Director of the City Hospital, Friedrichshain, lately gave some particulars relating to the late epidemic of typhoid fever before the medical society. The epidemic began in the middle of January, and lasted to the end of March. During this period 155 typhoid cases were admitted into hospital, four-fifths of the average yearly admissions. Sixteen of these died, 10.3 per cent., the average mortality being 17.3 per cent. Of men, 12 per cent. died, of women 8 per cent., and of the children 15.5 per cent. The higher mortality among the males was attributable to the drinking habits of the class of population affected. The total cases officially notified amounted to 510. These radiated from three distinct centres; the soil or drinking-water theory afforded no explanation of the outbreak, as the parts most affected were included in the sewage system, and the drinking-water came from the ordinary water supply or from springs. In the hospital, four sisters and two attendants were attacked; all recovered. There was no other case of infection, although on account of great overcrowding in the hospital complete isolation was impossible. From this it followed that as soon as the feces were quickly and thoroughly disinfected the disease was not transmitted from one person to another. This took place in the bed-pan in a five per cent. solution of carbolic acid, and the bed linen was placed immediately on its removal into a solution of sublimate, and in this state passed into the wash. Continued washing of infected linen was a source of danger, either from the infection through a wound on the finger, or from the inhalation of dried desiccated discharges, or because the exhausted body afforded less resistance to the entrance of germs. Neither calomel nor naphthaline was used, the diet was stimulating or strengthening, and in individual cases a mild bath treatment was adopted. The average stay in hospital was 34.6 days. Three cases of perforation of intestine were cured.

DR. GOLTDAMMER, of the Bethanien Hospital, considered the last epidemic to be the severest they had had for fifteen years. It was not dangerous for other patients to have typhoid fever amongst them. Of 72 cases 14 died, equal to 20 per cent., whilst in former years the mortality had been 9 per cent. Death resulted generally from grave complications, 4 died of paralysis of the heart and lungs, 4 of perforation of the bowel, 3 of hemorrhage, 1 from each of the following, viz., pyæmia, diphtheria, œdema of the glottis, empyema with hæmoptysis, fibrinous pneumonia. Antipyrin was not given. In insomnia morphia and chloral were used.

DR. P. GUTTMAN, of the Moabit Hospital, also remarked on the severity of the epidemic and of the high death rate, which in his hospital amounted to twenty-five per cent. The participation of the sensorium was especially striking. The patients were not isolated.

PROF. VIRCHOW remarked that the sudden increase in typhoid fever in the early part of the year did not affect Berlin alone. It was very striking, however, that the parts most affected had the same water supply, the Stralauer. This was the old water supply in the east part of the city, which had its supply direct from the Spree, and was filtered through sand. He was also of opinion that dejections from typhoid patients were not dangerous after disinfection. The sewage farms showed this, where there was no increase of typhoid during the epidemic.—*Medical Press and Circular*, July 24, 1889.

Treatment of Pneumonia by application of Ice.—DR. FIEANDT, writing in *Duodecim*, a Finnish medical journal, states that he has now treated no less than 106 cases of pneumonia with ice, and with the best results. Though ten of the cases were of double pneumonia only three out of the whole number succumbed, notwithstanding that the epidemic was by no means a slight one. The method adopted was to apply over the affected lung an india-rubber bag containing ice continuously for from twelve to twenty-four hours after the crisis. In addition to the local treatment, the patients were given such medicines as are usually employed, that is to say, opium, ipecacuanha, digitalis, brandy, etc. The method has, we may remark, received of late some attention in England.—*Lancet*, August 10, 1889.

Treatment of Burns.—The *Pharm. Post* advocates the following treatment for burns: The wound should first be washed with an antiseptic solution, boric acid solution

(1 to 30) being preferable, and then covered with a piece of antiseptic paper which has been soaked in a solution containing one per cent. of boric acid and 5 per cent. of cocaine; over this absorbent cotton may be placed and a bandage applied. This dressing should not be removed for several days. The cocaine acts as an anodyne, and the boric acid will induce speedy healing.

Camphorated Soap.—The following is claimed by the *Revue de Thèr. med.-chir.* for July 15th, to be a most valuable soap for nervous, rheumatic, and herpetic patients:

℞.—Bitter almond paste	. .	60 parts.
Tincture of benzoin (saturated)		40 "
Powdered camphor	. .	8 "
White soap	. . . .	500 "

Mix in water bath, then pour into suitable moulds and cool.

Salpingostomy.—Although in the majority of cases of disease of both tubes, the most applicable therapeusis is their entire removal, yet in individual cases a more conservative method of treatment may be available.

This idea was carried out by Dr. Skutsch, of Jena, in the following case, which is reported in the *Centralblatt für Gynäkologie*, August 10th. The patient was a woman aged twenty-eight, who consulted Skutsch in reference to sterility and severe pains in the abdomen. Examination proved that the uterus was in normal anteflexion, and of usual size, its canal also being normally large. The left ovary was also of normal size; the left tube could be distinctly traced from the uterine end, and was found gradually to increase in size toward the ovary, and to end in a thick swelling. The tube seemed to be greatly distended. The same condition was discernible on the right side, the tube being likewise distended and swollen. The diagnosis arrived at was, closure of the abdominal ends of both tubes and double hydrosalpingitis. Skutsch concluded not to remove the tubes, but to empty them of their contents and to establish an artificial opening in the abdominal ends of the tubes.

At the laparotomy the diagnosis was fully confirmed. The ampullary end of each tube was opened, the contents, which proved to be a yellow serum, removed; then an oval portion of the wall, about half an inch square, was excised; the mucous membrane of the tubes, as well as the serosa, were united by fine silk sutures. Through the newly formed opening a sound could be easily passed into the uterus. Healing took place rapidly, and was unaccompanied by fever. From the day of the operation all pain left the patient.

Skutsch has given this operation the name of salpingostomy. When the tubes are filled with pus such an operation is very risky. The author by no means claims that the operation is a universally practical one; yet, in such cases where conservative treatment seems indicated, it may be allowable. An important feature in its favor would be subsequent possible impregnation; this, however, remains yet to be demonstrated.

Auditory Troubles arising from Use of the Telephone.—Quite a number of cases of auditory disturbances have been reported as following the constant use of the telephone. True, these are, as a rule, of a mild nature, yet are none the less troublesome to the patients. The symptom most frequently experienced is a constant buzzing in the ears. Deafness, usually temporary, has also been noted. The cause, Dr. Gellé says, may possibly be ascribed to a predisposed nervousness on the part of the subject, which may excite preëxisting aural trouble. Gellé, in *L'Union Médicale* for August 6th, cites several cases, in all of which the typical buzzing was noted, also vertigo in individual instances. He further has observed inflammation of the drum membrane, but is inclined to consider this secondary. In nearly all the cases mentioned, an abandonment of the use of the instrument brought about a speedy recovery.

A Dental Anæsthetic.—The combination of cocaine and antipyrine in solution is said to act as a powerful local anæsthetic upon the gums, and also upon sensitive dentine. The anæsthesia is more lasting and more complete than when cocaine is used singly.

Dr. Martin, in *L'Union Médicale* for August 8th, suggests the following formula, which he has used with great success:

℞.—Hydrochlorate of cocaine	.	gr. ¼.
Antipyrin	. . .	grs. vj.
Distilled water	. .	♏ xvj.—M.

Ice in the Treatment of Burns.—Dr. J. G. Carpenter, in the *American Pract. and News* for August 17th, highly recommends the treatment of burns with ice, or ice-cold applications. Two cases are cited where the treatment was attended by most speedy and marked success. The applications should be renewed frequently.

Ergot in Childbed.—Dr. Pinzoni, of Bologna, has made some interesting clinical experiments in order to determine, with something like precision, the value of ergot in childbed. He administered ergot systematically to ninety-one lying-in patients, generally in the form of about two grammes of the powder daily. Seventy-nine similar cases were treated without ergot. After comparing the series, he came to the following conclusions: Ergot has little or no influence on the temperature, at the most a slight rise is occasionally observed. It hastens the pulse a little, yet has no marked influence on the physiological slackening of the pulse observed during the first days after delivery. The physiological increase in the secretion of urine during the first days is favored by ergot. The involution of the uterus, according to Dr. Pinzoni's researches, is either totally uninfluenced by ergot, or slightly retarded. The escape of the lochia remains normal when that drug is given; but clots, as universal experience has proved, are more readily expelled. The lochia are seldom fetid when ergot is taken. Ergot delays the after-pains in primiparæ, and lessens them when they have already commenced. The secretion of milk is retarded and lessened by ergot, and sometimes completely suppressed. Ergot seems, in the belief of Dr. Pinzoni, to be a prophylactic against puerperal fever, an indirect antiseptic agent. When infection has already taken place, ergot appears, on the other hand, to hasten the entrance of the virus into the circulation. Dr. Pinzoni's researches appeared in the *Bollettino delle Scienze med. Bologna.*—*British Medical Journal*, August 10, 1889.

Myrtol, a New Antiseptic.—This antiseptic, if we may credit the statements of the *Giornale di Farmacia e di Clinica*, No. 17, 1889, is superior to any other. It is obtained by distilling essence of myrtle.

Myrtol is a colorless liquid, with a strong characteristic odor of myrtle. Its formula is C^{10} H^{16}. When given internally, both the urine and perspiration will smell of the drug and the former will frequently assume a violet color.

According to Professor Eich, myrtol is a most efficacious antiseptic in putrid affections of the respiratory tracts. The symptoms of headache and vertigo, which so frequently follow inhalations of turpentine, were never observed to follow the similar use of myrtol; neither does it produce any irritation of the mucous membrane, and is, in this respect, therefore superior to phenic acid and creasote. The best method for administration is in capsules containing two and three-tenths grains of myrtol; one capsule to be taken every two hours.—*Journal de Méd. de Paris*, June 23, 1889.

Chronic Nervous Urticaria Treated with Antipyrin.—DR. NITOT, in an article appearing in the *Journ. de Maladies Cutanées* for June, 1889, speaks of the value of antipyrin, in daily 8 grain doses, in the treatment of chronic nervous urticaria. Four cases were treated, and the following conclusions arrived at:

1. Chronic nervous urticaria is a malady which seems to be confined to the female sex.

2. Antipyrin usually effects a rapid cure in such cases. Old standing ones will, however, require longer treatment.

Treatment of Dentition.—The idea that all interference during primary dentition is harmful, is becoming antiquated. On the contrary, the infant can be saved from much unnecessary suffering by the use of simple hygienic and prophylactic measures. MONTI, of Vienna, although averse to any actual assistance being rendered in the cutting of the teeth, recommends the following course of treatment:

1. *During dentition*—the following mouth-wash should frequently be used:

℞.—Salicylate of soda, or boric acid . . . . 3 parts.
Distilled water . . . 200 "
Tincture of myrrh . . 2 or 3 " —M.

2. *After dentition*—the milk teeth should be frequently cleaned with a brush dipped in the foregoing solution and dusted with the following powder:

℞.—Carbonate of magnesia 10 parts.
White chalk } . . āā 30 "
Salicylate of soda }
Essence of menthol . . q. s.—M.

This may be substituted by the following, which will be found most agreeable:

℞.—Carbonate of magnesia } . āā 15 parts.
Medicinal soap }
Cuttlefish bone . . . 15 "
Essence of menthol . . q. s.—M.

—*Rev. Génér. de Clin. et de Thér.*, July 25, 1889.

Nephrectomy for Malignant Tumors.—DR. A. SIEGRIST has lately gathered together the statistics of nephrectomies for malignant tumors, which he reports in the *Centralblatt für Chirurgie* for July 27th.

In all 64 cases of malignant growths of the kidneys have been recorded; in three of these, the operation was abandoned after an exploratory incision had been made; the total number of nephrectomies for such growths is, therefore, 61.

Of these, 32 cases died directly in consequence of the operation, a percentage of 52.45 per cent. One patient died soon after the operation from preëxisting cardiac affection. Nine deaths resulted, not long after operation, from recurrence and metastasis. Of the remaining nineteen cases, five were still in health two years after the operation; two patients still well one year after; three six months, and one five months after the operation. The health of the remainder only lasted for a few weeks.

The percentage of mortality following the operation was far greater for the intra-peritoneal method than for the extra-peritoneal method; 57.89 per cent of the former to 23.52 per cent. of the latter. Contrary to this, the percentage of recurrences following the extra-peritoneal method was proportionally much greater than that of the intra-peritoneal method; 41.17 per cent. of the former to 5.26 per cent. of the latter. The growths operated for included 29 carcinomas (three being adeno-carcinomas), 34 sarcomas (with two adeno-sarcomas); in one case the nature of the growth was not given.

It will be seen that the number of successful nephrectomies for malignant growths is very small; all the same the operation cannot be condemned, as it is the only chance for recovery of cases which otherwise would inevitably only have speedy death before them. Still, every case of malignant growth of the kidney does indicate surgical interference, as in many such a procedure would be worse than useless. As an instance of this, one need but cite DR. THIERSCH, who, in three cases of this kind, felt forced to discontinue the operation after the primary incision had been made.

Microörganisms found in Lung Cavities.—Among the accessory microörganisms in lung cavities the bacillus of green pus has been found, also the micrococcus tetragenus. According to Klebs, species of sarcina have been detected in the gangrenous patches during the advanced stages of the disease. DR. CHARLES S. EVANS claims, in the *Centralbl. für klin. Med.*, July 27th, to have isolated six others, which he describes as follows:

1. A bacillus, not liquefiable in gelatine, fetid in bouillon, odorless in agar, of a flesh color on potatoes, 1.85 to 2.25 μ. in length, and 0.75 to 1.25 μ. in width, rounded at the extremities, and movable.

2. A staff-like, movable bacillus, plump and oval, about 1.25 to 2.5 μ. long, and 1 to 1.25 μ. wide, grayish-white on potatoes, fetid on gelatin and agar, non-liquefying, decomposes bouillon.

3. Bacillus fluorescens putridus.

4. An actively moving staff-like bacillus, 1.5 to 2.75 μ. long, and 0.6 to 1.0 μ. wide; growing upon potatoes without odor, of a reddish color, not liquefiable, grows in bouillon with stinking odor.

5. Proteus mirabilis (Hauser).

6. Proteus vulgaris (Hauser).

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, AUGUST 31, 1889.

THE DIETETIC TREATMENT OF CHRONIC BRIGHT'S DISEASE.

ABOUT seven years have elapsed since Senator's noteworthy paper, "On the Hygienic Treatment of Albuminuria," was reviewed in these columns. Perhaps the most striking paragraphs in the original article published in the *Berliner klin. Wochenschr.*, for 1882, were these: "At any rate, one will do well to forbid entirely the use of eggs in a case of persistent albuminuria;" again, "as to other albuminous articles of food, especially meat, if it be desired to remove an albuminuria, they are to be rigidly withheld." Equally emphatic was the language of Semmola, of Naples, who may be regarded as the leading authority on the same subject in Italy. Founded, as these statements were supposed to be and actually were, upon experiment and experience, they made a deep impression, and have influenced the dietetic treatment of Bright's disease more or less throughout the world.

The observations upon which these conclusions were based were such as the following: The experiments of Stokvis and J. C. Lehman, showing that if egg albumen is introduced into the blood, not only does it appear in the urine, but it is also accompanied by serum albumin; the earlier observation of Barreswill, that twenty-four hours after ingesting ten eggs, albumin appeared in his urine, and a similar experience by Hammond; also experiments by Stokvis and others on the feeding of animals; Senator's own observations on the urine of apparently healthy men, in which albumin made its appearance twenty-four hours after liberal ingestion of meat; and, finally, Semmola's experiments on animals with egg albumen injected under the skin, followed by albumin excretion over and above the amount injected, accompanied also by a decrease in the twenty-four hours' urea, and by anasarca and dropsy of the serous cavities—in a word, according to Semmola himself, the animals upon which he experimented became true examples of Bright's disease.

This experience, and the conclusions therefrom, have been recently offset by some observations of JULIUS SCHREIBER, published in the *Berliner klin. Wochenschr.*, of June 10. First, the results quoted of the subcutaneous injections of egg albumen are met with the statement that the same reasoning would exclude milk from the diet suited to Bright's disease, because when injected directly into the circulation it promptly appears in the urine. Second, Schreiber made a number of experiments consisting in the ingestion of large numbers of raw eggs, forty-two in three days, in addition to other albuminous food, and the urine remained without a trace of albumin. Third, to eight subjects of Bright's disease he administered from six to ten raw and cooked eggs daily, with similar negative results; in fact, in certain instances, there was an actual diminution in the albumin, so that he drew the conclusion that the ingestion by the stomach of liberal amounts of egg albumen was not followed by an excretion of albumin in healthy persons, nor is the albumin in the albuminuric increased. Nay, more, it would seem that the latter were more frequently favorably influenced thereby. Finally, a series of experiments in which the effect of a mixed diet, a meat diet and a milk diet, on the albumin of certain chronic albuminuric cases were compared, led to the inference that no definite conclusion dare be drawn as to the effect of any of these diets, the use of milk being sometimes attended by a decided increase, and at others by a slight diminution in the albumin.

In strong contrast are these results with the experience of both Senator and Semmola, and especially of the latter, who has seen the albumin entirely disappear from the urine entirely a few days after placing the patient on a milk diet. As the result of all of which, Schreiber concludes that an albuminous diet in any shape has not the disadvantages in Bright's disease so generally claimed for it; that patients under a milk diet eliminate no

more albumin than under a diet of albuminous substances, and that they do much better with an admixture of both, gaining in weight and otherwise improving; that no exclusive diet should be long persisted in, with a view to making up or substituting any loss of albumin by the urine; that a free supply of vegetables should be permitted, while strong spices and alcohol should be prohibited.

At first thought, these opposite results, which are doubtless correctly reported, are confusing and discouraging; but they, nevertheless, have a useful bearing upon the dietetic treatment of Bright's disease. In fact, they are no more at variance than those of remedies which are now allowed an acknowledged position in the treatment of other diseases. Here, as in other instances, time and clinical observation must come to our assistance and determine true value. That the use of a pure milk diet in albuminuria is at times attended by a diminution of albumin, we have proved in our own experience over and over again. That, on the other hand, such a diet is the best thing in all cases of albuminuria, we are equally assured is not the case, while it is as true that there are instances of Bright's disease in which a milk diet, whatever be its effect upon the albumin, is attended by a palliation of some of its most annoying symptoms.

In like manner experience has taught us that there are cases in which the admixture of meat with the other food is not only harmless but necessary to the well-being of a patient, while in others its use is attended by an aggravation of some of the most annoying and dangerous symptoms; all this quite independent of the amount of albumin in the urine, the cases with least albumin being often those which are most unpleasantly affected by a meat diet and most benefited by milk.

The whole explanation, in our opinion, lies in the fact—not overlooked by Schreiber, but still not allowed sufficient weight—that the proportion of albumin does not go *pari passu* with the retention of poisonous substances in the blood; in other words, the quantity of albumin is not *always* an index of the severity of the disease. It would seem to be the case that in certain forms of Bright's disease, notably chronic diffuse nephritis, there is a resistance to the onward movement of the blood through the kidneys which results in albuminuria, while the power of the renal cells to eliminate urea and allied products is not proportionately arrested. On the other hand, there are cases of chronic interstitial nephritis where from increased cardiac propulsion or other cause, the blood is driven through the kidneys, leaving behind but a small amount of its albumin, while the cells, or what is left of them, are unable to do their work, and the excrementitious substances accumulate in the blood until the uræmic explosion occurs. It is in these last cases that an albuminous diet is harmful, and milk, farinaceous substances, and vegetables, and in some cases milk only, not only relieve symptoms but also prolong the life of the patient. In the first category, on the other hand, a mixed diet, including meat and eggs, is not only harmless but necessary to avert the anæmia which sooner or later succeeds. Even here, however, it is good practice, and we believe it is sustained by the results, to temper the amount of proteid food, and not to administer it *ad libitum*.

From the standpoint of our personal experience, the results of Senator, on the one hand, and of Schreiber on the other, are quite compatible, and both have their proper application in the dietetic treatment of Bright's disease.

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

THE fifty-seventh annual meeting of the British Medical Association was held in Leeds on August 13th to 16th, under the presidency of Mr. C. G. Wheelhouse, of Leeds. Over nine hundred members were in attendance. Dr. Hughlings Jackson delivered the Address in Medicine, Mr. Pridgin Teale the Address in Surgery, and Sir James Crichton Browne the Address in Psychology. The threatened bone of contention—the management of the *Journal*—which was brought to the fore by the unfortunate publication of the now famous script of the late Emperor Frederick, was quickly disposed of. It was pointed out that prior to the period when Mr. Ernest Hart took editorial charge of the *Journal* the yearly rate of growth of membership did not exceed forty; that since, and for some years past, the net growth had been at the rate of five hundred per annum, and now that figure even is exceeded, notwithstanding the very large proportion of the British profession who are already enrolled; and that this increase, which was coincident with the vast improvement which had taken place in the management of the *Journal* in the hands of Mr. Hart, was the best proof of the ability with which he had discharged his editorial duties. Upon vote the Association, with marked unanimity, expressed

its confidence in his management of the *Journal*. Thus this question was satisfactorily disposed, and the continued prosperity of the *Journal* assured.

The British Medical Association has certainly been fortunate in having had the benefit of wise counsel and able management. It has well maintained its reputation as a scientific body, and at the same time it has been an active factor in the advancement of the interests of the British profession, and with growing years its prosperity, power, and usefulness have steadily increased.

THE fifteenth annual meeting of the Mississippi Valley Medical Association will be held at Evansville, Ind., September 10th, 11th, and 12th. Those who will attend are advised to take a receipt for full fare to Evansville, Ind., that they may secure return tickets for one-third fare. The programme includes titles of nearly one hundred papers The indications are that the meeting will be larger than any yet held by the Association.

THE New York City Board of Health has declared war against the overcrowding of tenement-houses, and as a first step it is proposed to have positive proof as to the extent of the overpopulation. This is to be obtained by the taking of photographs at midnight by means of flash-light. Some of the inspectors are photographers, and have already tried the process as a means of demonstrating and perpetuating curious unsanitary conditions in their respective districts. And now the Board has decided to adopt this graphic method as a form of official record. It will assist in making up the history of "Hell's Kitchen," the "House of Blazes," and "the Bend," and will serve to illustrate future annual reports.

The Board will enforce another requirement of the tenement-house law, which is frequently ignored by the landlords, and which directs that water shall be placed on every floor of houses of that class.

DR. E. M. MOORE is at the head of an association in Rochester, N. Y., which has established a lake-side summer hospital for infants. The institution begins with accommodations for twenty patients and caretakers. It is located at the village of Charlotte, on Lake Ontario, with Dr. George W. Goler as attending physician. The primary design of the new hospital is to supply gratuitous treatment to children suffering from the diarrhœal troubles of the summer season, though not limited to them.

SOME young women college graduates, residing in New York City, propose to make a settlement in a bad tenement-house district, for the purposes of dispensing philanthropy and sanitation. Funds amounting to $3000 are in hand, and a large house of the olden time, near Ludlow Street, has been secured for occupancy next September. The young ladies will live there in a locality of squalor and hopelessness, doing what they can to instruct and relieve the poverty-stricken mothers and children. They will be accompanied by a female physician. It is expected that the shortcomings of the municipal officers whose duty it is to enforce cleanliness of street and domicile will be noted and reported with great particularity, and in a way that sanitary results will necessarily follow. These colonists must all be graduates, and no one will be received for a shorter stay than two months.

A NEW journal has sprung into existence in France, bearing the title of *Annales de la Tuberculose*. It is to be published bi-monthly under the editorship of DRS. FILLEAN and ISCOVESCO. It is virtually the creation of the Congress for Tuberculosis, recently held in Paris.

Merck's Bulletin, an admirable monthly publication giving the new discoveries, introductions, or applications of medicinal chemicals, and published at New York by the well-known manufacturing chemist of Darmstadt, whose name it bears, in the issue for June, just received, contains a very valuable table of maximum doses of 113 of the newer drugs, for the majority of which a statement as to the dose limits is not readily accessible elsewhere.

DR. EDWARD J. HARVEY, of Red Bank, N. J., had the satisfaction of restoring to life a drowned person, after rowing his boat a quarter of a mile to reach the point in the river where the person went down. His manipulations for the man's respiration, after he had brought the latter up from the bottom and lifted him into the boat, were performed right there in the boat. The scapular region rested upon one of the thwarts, while the head was dependent, nearly touching the bottom of the boat. This posture, with some pumping motions of the arms, liberated the liquid from the lungs, and breathing, but not consciousness, was reëstablished. Dr. Harvey

then rowed to the shore and his impromptu patient was given up to the physicians of the place, and recovery resulted.

If the rescue, in this case, had happened to have been made by any other than a physician, who was qualified to begin manipulations while floating in his little row-boat, it is altogether probable that the man's life would have been lost. The physician had the presence of mind, the knowledge, and the life-saving impulse, the combined exercise of which were necessary to make Dr. Harvey a life-saver of note.

SOCIETY PROCEEDINGS.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, June 17, 1889.

THE PRESIDENT, CHARLES S. WOOD, M.D., IN THE CHAIR.

DR. J. LEWIS SMITH read a paper on

IDIOPATHIC CONTRACTIONS, OR TETANY, IN INFANCY AND EARLY CHILDHOOD.

This disease, which has probably always existed, he said, was first brought to the attention of the profession in 1831 by M. Danee, who described it as it occurs in the adult. In the following year M. Tonnelé published an essay on tetany in which he designated it as a new convulsive disease of childhood. Having given a further *rêsumê* of the literature of the subject, he stated, that the term tetany is applied to a disease which is characterized by tonic contraction of muscles, commonly those of the extremities, but sometimes also those of the face or trunk, produced by causes external to the nervous system and usually of temporary existence. In tonic muscular contraction arising from disease of the brain, spinal cord, or their meninges, or of the nerve supplying the affected muscles, the contractions are not the malady itself, as in cases of tetany, but are merely symptoms of a disease located elsewhere.

Tetany may occur at any age, but is most frequent in infancy, in early childhood, and in early adult life. It is seldom that the most thorough investigation elicits any inherited predisposition to nervous or other diseases in cases of tetany. Rarely, however, multiple cases have occurred in families; from which he inferred that there may perhaps be an inherited neuropathic tendency. Nearly all writers assign the most important place in the causation to diseases of the digestive apparatus. Thus, Trousseau states that in the cases which have fallen under his observation diarrhœa has been commonly present (many cases met with in 1854 following cholera); but in one instance the cause seemed to be obstinate constipation.

In the following case, which he has recently had under observation, Dr. Smith said that constipation also appeared to be the chief cause. George C., aged seven months, living in a tenement house. Taken from the breast at the age of two months and fed upon condensed milk, with Nestlé's food once a day. Habitually very constipated, so as frequently to require assistance in obtaining an evacuation. Recently groups of muscles in all the extremities have undergone tonic contraction, producing the deformities shown in the accompanying cut. He has also had brief attacks of spasm of the

glottis, both day and night; causing for a moment the characteristic stridulous respiration. Otherwise he seems entirely well, though the mother states that at times he is feverish; this probably being due to the constipation. Attempts to straighten the fingers and toes elicit cries of pain, and the mother also says that at times both thighs and both legs are flexed, and that he resists attempts to straighten them on account of the pain. The treatment in this case consisted of bromide of potassium, in addition to measures for the relief of the constipation, and four months elapsed before complete recovery took place. It was noticed that when the treatment was perseveringly employed the contractions gradually diminished and then ceased, but that they returned when it was discontinued. During the four months that the tetany lasted the first tooth pierced the gums.

Erb states that all forms of intestinal disease may cause tetany, but that it especially occurs after protracted and exhausting diarrhœa. Gowers also regards diarrhœa as the chief cause. Dr. Smith has not found any recorded instance in which lumbrici or ascarides caused the contractions; but Gowers alludes to three cases in which they were produced by the tape-worm. Remarkable as it may seem, dentition *per se* is but seldom a cause of tetany, but in a case which Dr. Smith related, which he saw in consultation with Dr. E. G. Janeway, teething was regarded, after repeated and thorough examinations, as the chief cause of the trouble. The child was twenty months old, and the gums were found swollen and congested over the crowns of five advancing teeth, which appeared to be in nearly the same stage of development, and were evidently soon to protrude. The contractions continued for three weeks, when all or nearly all the imprisoned teeth escaped; and after this there was never any return of the trouble.

Tetany is more liable to occur in those whose systems are enervated by preëxisting disease than in those who are robust. Rilliet and Barthez, Erb, and Gowers mention a number of febrile affections as a sequel of which it is liable to occur, and Gowers also states that in young children attacked by it indications of rachitis are rarely absent. Another recognized cause of tetany is exposure to cold, and hence it has been regarded by some as in reality a rheumatic affection. In infancy and early childhood, however, other causes are apparently much more common than taking cold.

Ordinarily tetany occurs without any marked premonitory symptoms, but in some instances it is preceded by pain in the head or spine, vomiting without any previous indigestion or gastric derangement, and a general feeling of indisposition. Usually, in those old enough to express their sensations, it begins with tingling, burning, or other unusual sensory manifestations. The tonic contractions occur suddenly, and sometimes simultaneously in the upper and lower extremities. Rarely the contractions occur in the upper extremities alone, or in the muscles of the trunk. At first a feeling of stiffness is experienced, and this is followed by the tonic contraction, with the fixing of the affected part in a state of persistent flexion or extension. Usually, as regards the upper extremities, the contraction of the thenar and hypothenar muscles causes hollowness of the palms of the hands; the first phalanges of the fingers are flexed, the second and third phalanges extended, and the thumb adducted and flexed so as to press against the index finger or lie underneath it. The fingers sometimes incline toward the ulnar side, and sometimes are pressed against each other. Usually the hand is slightly flexed, as is also the forearm. The muscles which move the arm usually escape, but exceptionally there is adduction of the arm on the shoulder. The hand may be extended, instead of flexed, and all the points of the fingers extended; or they may all be flexed, and the fist closed.

The thighs may be adducted or flexed, the legs extended or flexed, the foot extended, forming a talipes equinus, and the toes flexed. In mild cases, or those of ordinary severity, the contractions are limited to the muscles of the extremities, and are more marked and persistent in those that move the hands, feet, fingers, and toes than in other muscles; but in severe cases the muscles of the trunk and head participate. Contraction of the abdominal muscles produces rigidity of the abdominal walls. Spasm of certain of the thoracic muscles occasionally occurs, causing dyspnœa, and even lividity; and in some of these cases of embarrassed respiration the diaphragm is probably involved. Opisthotonos, retention of urine, anteflexion of the neck from contraction of the sterno-mastoids, fixation of the jaws from spasm of the masseters, retraction of the angles of the mouth, stiffness of the tongue, and indistinct articulation, are occasional symptoms in severe cases.

The contractions render the affected muscles hard and unyielding, and the child cries from pain when attempts are made to straighten the limb. If the spasm be slight, some voluntary movement of the affected muscles is possible, but it is restrained and difficult. In severe cases voluntary motion is impossible. Unless the attack is very mild, pain is felt in the contracted muscles, such as every one experiences when a spasm occurs in the calf of the leg. It may occur in paroxysms with distinct intermissions, or without interruption, and it may vary at different times, probably from some variation in the degree of spasm. Certain subjective symptoms, such as numbness and tingling, which sometimes occur in tetany, may continue during the intermissions or remissions. After some hours or days the rigidly contracted muscles relax, and the disease disappears, except, perhaps, that a degree of stiffness remains. But the respite is usually of short duration. The spasms recur, and several successive recurrences and intermissions take place, running over months, before the disease is permanently cured. During the intervals in the contractions the affected nerves and muscles are, in ordinary cases, unduly excitable; so that sudden pressure or percussion causes some contraction. It was first noted by Trousseau that, as a rule, compression of the artery and nerve supplying the contracted muscles causes or increases the contraction. Dr. Smith said it was an interesting fact that in cases which he had observed the spasms did not cease in sleep, though perhaps the contraction of the muscles was not as great as when the patient was awake.

Gowers, Erb, and others have noticed that the electrical excitability of the nerve which supplies the contracted muscles is increased. When contractions are strong, œdema sometimes occurs, especially upon the dorsal surfaces of the hands, and Henoch attributes this to compression and consequent passive congestion of the veins. In severe cases perspiration sometimes occurs, and an erythematous redness may appear on the affected muscles. Occasionally, in acute attacks, the temperature is moderately increased, but ordinarily it is normal. Tetany does not usually affect the internal organs, but in two cases reported by German authors albuminuria was present for a brief time, and in one recorded instance the urine exhibited traces of sugar during the paroxysms. Occasionally, in long-continued cases, the contracted muscles undergo a degree of atrophy, which is attended by diminished electrical irritability, and Gowers states that general muscular atrophy has also been observed following tetany. Dr. Smith then related two cases, one occurring in his service at the New York Infant Asylum, and one seen in consultation by him, which he said might be regarded as typical cases of the disease.

In tetany the motor cells of the spinal cord and the axis cylinders are supposed to be in some way affected, but the pathology of the disease is still involved in great obscurity. As to its diagnosis, the bilateral and symmetrical nature of the affection is of great importance. The fact that certain groups of muscles on the two sides are affected enables us to distinguish it from the muscular contractions due to central lesions of the nervous system.

Moreover, the spasms in tetany, as has been seen, as a rule, are attended with intermissions, the nerves over the affected area have increased sensitiveness, and spasms may be produced by compressing the latter, thus forming a further contrast to the symptoms present in muscular contractions produced by disease located in the nervous centres or in the nerve supplying the affected muscles.

With regard to its prognosis, Dr. Smith said that tetany, whether intermittent, remittent, or occurring with little daily variation, sometimes soon ceases, and never returns. In other instances it does not cease entirely for months, although varying in severity at different times. Certain patients have attacks of it for years, with intervals of perfect health, and sometimes years elapse between the

attacks. During infancy and childhood tetany when uncomplicated ends favorably, with possibly now and then a rare exception. The few recorded cases in which death apparently resulted directly from this disease, have, as far as he has observed, all been in adults.

In the treatment, the cause or causes of the attack, so far as ascertained, should obviously receive prompt attention and be removed, if possible. The bromide of potassium is a most useful remedy for tetany in infancy and childhood, and it should be given in decided doses—as four grains every three hours for a child of from eighteen months to two years. Chloral, Indian hemp, and chloroform by inhalation are also useful in allaying the spasms. Chloroform is said at first to increase the spasms, but they cease when the patient is fully under its influence, though liable to return when the inhalation is discontinued. Hauber states that two cases which were not relieved by other treatment were soon cured by active massage employed when the patients were under chloroform narcosis. Stimulating liniments containing chloroform, applied over the affected muscles, have also been found of benefit in some instances. In his remarks on the electrical treatment of tetany, Gowers says that faradism is contra-indicated, but that good results have sometimes been obtained from the voltaic current. Gowers states that he also met with good results from digitalis given at bedtime in nocturnal tetany. When rachitis is present, as is often the case, cod-liver oil, lime, and syrup of the iodide of iron are indicated. Since so many cases originate from gastro-intestinal disorders, it is important that the diet should be bland, easily digested, and nutritious.

DR. J. R. MACGREGOR said that the affection in question seemed to occupy a position between the slighter spasmodic troubles we meet with and the permanent contractures attended with alterations of structure. It was evidently neuropathic in its nature, but whether such contractions could strictly be said to be idiopathic seemed to him somewhat questionable, since they might perhaps be dependent upon some cause not as yet recognized. It was natural that tetany should be excited by disorders of digestion in infants as the digestive organs became more and more elaborated. This gradual change in these organs occupied the entire first eighteen months of life, and they were extremely apt to get out of order during this period. In these disturbances dentition was also liable to manifest itself in an abnormal manner, and it seemed to him under these circumstances it might readily be instrumental in the causation of tetany.

INTESTINAL OBSTRUCTION; LAPAROTOMY; DEATH.

DR. THOMAS H. MANLEY presented a section of intestine, over four inches in length, removed by laparotomy from a patient suffering from intestinal obstruction. Low down in the left iliac fossa a knuckle of gut was found caught by a firm constricting band which completely obstructed the bowel, and two patches of ulceration being discovered on the peritoneal surface, it was decided to excise the affected portion. The patient was greatly exhausted when he was first seen, and he never rallied from the operation.

DR. J. G. TRUAX said that the patient was sent first to the medical wards of the Harlem Hospital with a diagnosis of enteritis. He recognized the case as one of intestinal obstruction in which surgical interference afforded the only hope of relief, and at once transferred the patient to Dr. Manley in the surgical wards. It seemed to him that possibly the patient might have recovered if Dr. Manley, instead of making a section of the gut, had contented himself with merely relieving it from the bands which constricted it.

FIRST CONGRESS OF THE GERMAN DERMATOLOGICAL SOCIETY.

Held in Prague from June 10 to 12, 1889.

(Concluded from page 135.)

DR. NEISSER read a paper on

THE STRUCTURE OF THE BACILLI OF LEPROSY AND TUBERCULOSIS.

DR. KAPOSI, of Vienna, made some

OBSERVATIONS ON THE LAST EPIDEMIC OF HERPES ZOSTER IN VIENNA.

He said that herpes zoster appears in the epidemic form in the months of March and April, and September and October, at a season when erysipelas and pneumonia are observed most frequently. This leads us to believe that there is an infectious cause, and this belief is strengthened by the fact that a patient only suffers once from the primary herpes zoster.

During the last epidemic, November, 1888, to February, 1889, out of forty cases of zoster, five only were really developed, while the others took the abortive form. The case of herpes zoster consecutive to an injury is, of course, to be entirely left out of this class. To this group he added a new form, the "zoster atypicus gangrænosus hystericus," photographs of which he presented. On a young lady of twenty-two there could be seen on both sides of the chest and on the upper portion of the abdomen several gangrenous spots of skin, having a length of three to eight centimetres (one and a quarter to three and one-eighth inches), of a linear or oval form, green color, with dentated borders; they were formed of several lenticular spots. In other places, still younger to the process, one could see that the necrosis commenced in the papillary body and chorion, while the epidermis remained intact. After the elimination of the necrosed parts, persistent suppurating ulcerations remained, extending deeply into the dermis. Moreover, small vesicles appeared around the necrosed portions, their centre being depressed and of a black or green color. The eruption had developed itself in about eight days, but the patient had already suffered on several occasions since her twelfth year, and regularly each year since the age of twenty, of the same disease, localized on the extremities, the face, the chest, and abdomen, where keloid-like cicatrices could be discovered.

Another young patient, fifteen years old, suffering from the same disease, presented a complete hemianæsthesia of the left side. He thought that this disease, which differs from Doutrelepont's spontaneous gangrene by the formation of nodosities and vesicles disposed in groups and by the cyclic course of the attacks, ought to be regarded as zoster gangrænosus hystericus developed on an hysterical basis, and the etiology of which must be looked after in a periodical alteration or special irritability of the spinal or cerebral vaso-motor centres.

DR. DOUTRELEPONT, of Bonn, said that his case of

spontaneous gangrene he at first thought was a variety of zoster, and he is more convinced of it. His patient is also a nervous case, and has even tried to commit suicide.

Dr. Chiari, of Prague, then read a paper on

VARIOLIC ORCHITIS.

He has observed in forty-five out of sixty-five cases that the parenchyma of the testicle is almost constantly, and especially in children, the seat of macroscopical alterations in the course of smallpox, alterations which he would be tempted to consider as analogous to the eruptive elements of the skin. By the aid of the microscope, he has been able to recognize in the testicle three typical zones of papules of smallpox: the zone of total necrosis, the one of the infiltration of the connective tissue and necrosis of the cells, and, finally, the zone of peripheric exudation. He has never observed any suppuration; the necrotic spots are soon absorbed; microorganisms have been met with in seven cases. All these observations permit him to affirm more strongly than ever that this orchitis is a specific manifestation of variola.

Dr. Joseph, of Berlin, then made some remarks on

CIRCUMSCRIBED ŒDEMA OF THE SKIN AND PAROXYSMAL HÆMOGLOBINURIA.

He had treated a young man, who for the past two years and a half was subject to circumscribed acute œdemas of the exposed parts every time he would expose himself to cold or wind; the œdemas would disappear after the patient had remained for one-quarter of an hour in the apartment. Last winter, having taken cold, he was seized by an attack of hæmoglobinuria; he took to bed, sweated as much as possible, and the next day was well again. This coincidence between the acute œdema of the skin and the paroxysmal hæmoglobinuria deserves consideration. This young man had taken a great deal of Tokai wine for over one year; and he should say that he had already treated a man of thirty-eight years of age, strongly alcoholic, who, after each excess of drinking, presented acute cutaneous œdemas.

Dr. Rosenthal, of Berlin, said that cases of acute circumscribed œdemas are not very rare, and generally these lesions are in connection with inflammatory parts. Unna had already drawn attention to a certain analogy which existed between acute œdema and urticaria due to venous spasm.

Dr. Neisser did not admit this opinion of Unna, and he is inclined to think that the œdema is more often due to an irritation of the vaso-dilatator nerves, the urticaria being then only a subacute œdema arising from the dilatation of the arterial vessels.

Dr. Behrend, of Berlin, thought he was the first to announce that circumscribed œdema was nothing else than a very extensive urticaria. This opinion had been confirmed by observations he had made in a patient who presented acute swellings analogous to typical eruptions of urticaria. As to the explanation of the pathogeny of the affection, he was unable to give it, for he did not belong to those who sought to ascribe all diseases of the skin to a nervous origin.

DIAGNOSIS OF POSTERIOR GONORRHŒAL URETHRITIS.

Dr. Jadassohn, of Breslau, recommends irrigations in the anterior portion of the urethra to recognize if the posterior portion of the canal is involved or not.

Dr. Finger, of Vienna, did not believe in urethral endoscopy, and he referred to the regurgitation of pus from the posterior portion of the urethra into the bladder in cases of posterior urethritis; and presented specimens of sediments obtained from the second portion of the urine in which he had found gonococci when he had to deal with posterior specific urethritis.

Dr. Grünfeld, of Vienna, believed that with the endoscope one can see every part affected in posterior urethritis.

ON THE VARIABLE TOXIC POWER OF MERCURIAL PREPARATIONS USED IN HYPODERMIC INJECTIONS.

Dr. Zeising, of Breslau, had made on rabbits subcutaneous injections of different kinds of mercurial preparations, and he had found that the results obtained were in proportion, not to the quantity of mercury used, but to the easy absorption of the preparation used. As regards the intensity of action of a drug, one can safely say, that the most easily absorbable substances are those that are very soluble; then come those which contain insoluble salts; and, finally, those made with the metallic mercury.

Dr. Lesser had observed in 12 cases, out of 500 injections made with different salts, serious intestinal symptoms. The objection to these insoluble preparations is that there is formed in the body a deposit of mercury, which progressively, and in a continuous way, infiltrated itself into the organism, and all of a sudden we might witness the appearance of a very marked mercurial intoxication.

Dr. Kaposi had had one case of death after the injection of the gray oil, subcutaneously introduced; the patient had received during seven weeks 215 grammes (over eight fluidounces) of mercurial oil, which amounts to 0.72 centigrammes (eleven grains) of mercury. The dosage of insoluble preparations still remains very doubtful, and their too extensive use brings on a deposit of mercury which may become very dangerous.

Dr. Neisser, of Breslau, thought that the criticism made against the injections of the insoluble salts of mercury was correct; but this does not mean that the treatment by unctions is without danger, for he had lately had two cases of such poisoning. Out of eight hundred individuals whom he had treated by injections of insoluble salts, he had had but one case of intense diarrhœa. He thought also that it was better to make the injections into the subcutaneous tissues instead of into the muscles.

Dr. Herxheimer, of Frankfort-on-the-Main, had given up using the preparations of calomel and yellow oxide of mercury on account of the severe pains produced. He had then employed the salicylate of mercury in intra-muscular injections and had had very good results.

Dr. Epstein, of Nuremberg, had treated, last year, forty-two patients with the salicylate of mercury, and he had never observed very serious intestinal troubles; in children he had used with success the thymolate of mercury. A fact worth mentioning was that we must not make subcutaneous injections of insoluble preparations in individuals suffering from phthisis, for in such patients a certain amount of fever will be produced.

Dr. Rosenthal, of Berlin, did not think that the

danger of the mercurial treatment is to be ascribed to the process used or the nature of the salt, but only to the drug itself and to its special action on the organism.

DR. PETERSEN said that when he began his service at the hospital all the patients treated by mercurial ointment were suffering from stomatitis; he then immediately resorted to injections and no more accidents were observed. He had treated 1300 syphilitic patients, of whom 500 were treated with calomel, and of which he had twenty per cent. of stomatitis; 500 were treated with the yellow oxide of mercury, very few cases of stomatitis occurred; now, he employs the salicylate of mercury, and he sees hardly any cases of stomatitis. As was mentioned by Epstein, he had seen tuberculosis develop more rapidly in tuberculous syphilitic patients treated by injections.

DR. DOUTRELEPONT said that when he injected calomel he occasionally observed intestinal troubles and often stomatitis; using now salicylate of mercury, he rarely met with those troubles.

DR. NEISSER did not think the use of injections of soluble or non-soluble salts a matter of indifference; he especially prescribes the former when he wants rapid action.

DR. PICK very much preferred the insoluble salts, on account of the less dangerous symptoms to which they give rise; but he thought that we ought to determine between these two important methods in the treatment of syphilis, injections and unctions, which one is to be preferred in certain cases, which in others.

DR. LESSER thought that injections of soluble are more dangerous than those of insoluble salts, for they are the cause of the introduction of a larger quantity of mercury into the system. Yet every method can bring on a serious intoxication if the dose is very much exaggerated or if no precautions are taken.

DR. WINTERNITZ, of Prague, appreciated the different methods of treatment of syphilis, and thought it necessary that one should study the exact quantity of mercury eliminated by the urine.

The Congress of 1890 will unite with the Dermatological Section of the International Medical Congress, which also meets in Berlin next year.

CORRESPONDENCE.

THE INTERNATIONAL CONGRESS OF DERMATOLOGY AND SYPHILOGRAPHY.

THE International Congress of Dermatology and Syphilography, held in connection with the "Universal International Exposition of 1889," in the city of Paris, was opened on the fifth of the current month, and has just adjourned after a week of serious work. From every point of view it may be regarded as a remarkable success. Never before in the history of medicine has such a large body of experts in cutaneous and venereal disease been assembled for discussion of the matters of interest connected with these disorders. Never before to a similar extent have the great teachers and masters of these subjects been associated in person. The well-known antipathy between the French and German nations, born of their late war, led to the fear lest the German dermatologists, whose absence would have given the present Congress far less of an international character, would not present themselves. Happily this fear was groundless, The response was as general as the invitation was generous.

The readers of THE MEDICAL NEWS will scarcely expect to find in a letter of this sort, which must necessarily be desultory in character, even the briefest *résumé* of the more than one hundred papers on skin diseases and syphilis, with the discussions which they provoked; as well as an epitome of the discussions, occupying fully eighteen hours, on the "general" questions, six in all, submitted by the Committee on Organization for consideration by the Congress in its morning sessions. I shall merely attempt here to give a hasty pen-and-ink sketch of the men who took part in this great work, and of the way in which they did it.

The Congress was held in a suitable place surely. The venerable St. Louis Hospital of Paris, "constructed in the reign of Henry the Great, fourth of that name, King of France and Navarre," has been so often described and visited by American students, that its ancient tiles, its grimy walls, and its quaint gable windows, are familiar enough at home. It was early in its history devoted to "pestiferous" diseases; and when its royal founder made its erection possible, he did a better work for future generations of his contrymen than with his "oriflamme" at Ivry, upon which Macaulay has dilated in his poetic measures. Skin diseases and venereal diseases are fashionable in and about "the St. Louis." The matron of the out-patient department greets one with a smile upon her lupoid features. A benign epithelioma ornaments the countenance of the guard. The military attendants have interesting lesions under their white trousers.

The Congress was opened in the large and comfortable hall of one of the central buildings devoted to the museum and library of the hospital. Its walls are constituted of the upper and lower cases, divided by a gallery, in which are displayed the magnificent collection of models of all diseases of the skin, fashioned by the hands of the distinguished Baretta. For this special occasion it was decorated also by festoons of the flags of all nations. The adjoining library, hall, and consultation-room, furnished ample facilities for registration and official purposes, as also for the duplication of sessions—dermatology being the order for the afternoon at some sessions in the larger hall, and venereal diseases in the smaller, simultaneously.

There were many notable men in view when Prof. Hardy called the Congress to order for its first session, and, was speedily honored by an election as its permanent president. On his left was the venerable Ricord, now ninety years of age, once the most decorated man in France, and even now, in these days of a French Republic, showing, when he rose to acknowledge the applause elicited by the mention of his name, the costly jewels of an order on his left breast. Here also were Fournier, Maurice, Jullien, Hallopeau, Diday, Besnier, Vidal, Brocq, and Barthélemy among the French; Malcolm Morris, T. C. Fox, Crocker, and McCall Anderson, as representatives of Great Britain; Kaposi, Neumann, Hans Hebra, Schiff, and Schwimmer, from Austria; Unna, from Hamburg; De Amicis and Pellizari, from Italy; Boeck, from Christiania; and dozens of others whose names are scarcely less known all over the world,

and from every country of the same. From the land of the leper; from the city where "the itch" most prevails; from the region where the "Biskra bouton" enlarges; and from the district where pellagra flourishes, they had come who best knew the history of these maladies. The United States of America were represented by Dr. James C. White, of Boston, who was honored by an invitation to preside at one session; Dr. James Nevins Hyde, of Chicago; Dr. Robert H. Morison, of Baltimore, and Dr. Klotz, of New York. In the course of the Congress, Dr. White read (in English) an interesting paper on the "Hereditary Dermatoses"; Dr. Hyde (in French) a paper entitled "Observations based upon the Statistics of Cutaneous Diseases in America," while Dr. Morison's paper was read for him by the Secretary (in French) "On the Formation of Pigment in the Skin of the Negro."

The fullest liberty had been offered to those participating in the sessions of the Congress, as to the employment of the language most familiar to each participant. But, as a matter of fact, the very general unfamiliarity of the French members with any language save their own, rendered it quite necessary to employ the French language in all general discussions. Prof. McCall Anderson, Dr. Crocker, and Mr. Malcolm Morris, addressed the Congress in English, but Pringle, Drysdale, and Wyckham all employed the language of the majority. One only, Unna, undertook to speak in German, but he elicited such a storm of opposition by this course that he at once betook himself to the French, and did not subsequently express himself in another tongue. It gives one an idea of the polyglottic education so common on the Continent, if one sees a dozen German physicians taking part in a French Congress and talking French to each other. One of them, indeed, when requested, translated the speech of an English member into French for the benefit of the Gallican members present unfamiliar with that tongue.

The first question discussed before the Congress elicited a wide difference of opinion as to the constitution of the group "lichen." There seemed to be but a small number of those engaged in the debate (including Hebra, Neumann, Schwimmer, Morris, Boeck, Besnier, De Amicis, Kaposi, Schiff, Jamieson, Unna, Vidal, Leloir, and Hallopeau) who accepted the American doctrines respecting the absolute differentiation of lichen planus and lichen ruber. Some of the Vienna gentlemen asserted very positively that they had observed typical lesions of each of these alleged diverse disorders in one and the same patient. The views of Jamieson were in accord with those expressed in his treatise, where a number of other affections, some even eczematous in type, are described as "lichenoid." There was no agreement reached as a result of this debate, but it served an excellent purpose. It brought the real leaders of dermatological thought and observation to the front. After they had measured swords in debate, they learned at least what and whom to respect. Besnier held his own superbly with the great masters of the Vienna school; Vidal proved clearly that the sceptre had not yet wholly departed from France.

The enormous facilities of the St. Louis Hospital and museum were gradually shown as the discussions went on to pityriasis rubra and the general exfoliative dermatoses, primary in character, which have been classed with it. And rarely, during the debate, while a speaker occupied the tribune, a patient was shown, his person completely exposed, exhibiting well-marked features of the disease under discussion, which was simultaneously illustrated by perhaps half a dozen excellent colored "moulages," and as many more aquarelles and colored lithographs.

Kaposi here placed himself squarely and positively on the old ground respecting pityriasis rubra first held by Hebra. Only an enormous experience could enable a man to identify positively the specific affection to which this name was strictly limited in its application by the great Vienna teacher. The large number of cases in which, with considerable redness of the surface of the skin, with fine desquamation, there was associated some infiltration, and even cachexia, were not cases of pityriasis rubra. If the patient, with these symptoms generalized, recovered, assuredly he had not suffered from such a malady. A fatal result was practically essential to the correctness of the diagnosis.

Of course, when the question under discussion related to pemphigus and the complex or multiform bullous dermatoses, the much abused and ably advocated "dermatitis herpetiformis" of Duhring, was sure to present itself. Its identity and special claim to recognition as a distinct disease were ably presented by Brocq. Never did a cause have a more logical, earnest, eloquent, and painstaking advocate. Brocq is a relatively young man of rather delicate appearance, who had really risen from a sick bed in order to do this duty. His speech was enforced (as so often during this eventful and fruitful Congress) by the presentation of a patient exhibiting perfectly typical manifestations of the disease as described by Duhring; also by the admirable series of "moulages" made by Baretta, illustrating other phases of the malady. Further, as if to clinch the position beyond peradventure, Dr. Duhring himself had examined this patient but a short time before, and had written a letter (which was read) completely identifying the disorder from which the patient suffered, as that which he has so elaborately described. It should be explained that the absence of this gentlemen from the Congress was due to an indisposition, in consequence of which he was confined to his hotel in London.

Here, also, after a full and exceedingly interesting discussion of the subject, Kaposi displayed that brave and persistent irreverence, which is a wholesome thing for any scientific body, if its apostle be only a well-trained gentlemen. He knew, he said, nothing about dermatitis herpetiformis. The patient, whom he had examined, presented to his view the symptoms of an ordinary pemphigus. He dwelt upon the variability of the several lesions which may be displayed in pemphigus; and practically refused to permit them to be considered apart from that category.

Brocq concluded with an earnest and powerful summary of the case. But, after all said and done, dermatitis herpetiformis may be said to have at last established itself fully on a sound basis in dermatological nomenclature, from the mere fact of its admission to such an important debate before such a large body of experts. Its fight has been fought; its victory not assured, but its ground is held. Being unconquered, the rebuff is for its adversaries. It will probably never include the large number of morbid conditions claimed for it by its enthusiastic advocate, whose name will always be associated

with it. Shorn of these, however, it will always be recognized as a special and distinct dermatosis. The credit is with America; and all those who have steadily believed in the future of American dermatology may well feel pride in the result.

Another patient, exhibited before the Congress, served to illustrate an excellent paper by Darier on "Cutaneous Psorospermosis." The body of this man was extensively covered with peculiar warty-looking lesions, evidently associated with proliferation of tissue in and about the sebaceous glands, which Dr. White, of Boston, recognized as identical with the affection lately described by him as a "keratosis follicularis."

Of other patients also exhibited, two, an elder and younger sister, were perfect illustrations of that exceedingly rare disease known by many names, including the "xeroderma of Hebra," the "progressive melanosis of Pick," etc. In these cases there is commonly a curious admixture of coincident symptoms, including discrete pigmentations, telangiectases, atrophies, and new growths. These patients were shown by Quinquaud, who has a remarkable facility in the line of clinical demonstration. His utterance is clear, emphatic, and unhesitating; with each sentence formed as though carefully studied in advance, and every word clean-cut as with a knife. His mind works in a logical and straightforward channel. The result is exceedingly happy. He looks as though he were almost idiotic in consequence of the intense concentration of all his faculties upon his subject; but he talks at such times as if inspired.

Some of Hallopeau's patients were scarcely less interesting. Two were in the premycosic stages of mycosis fungoides, one of these exhibiting, after several years of suffering, an extensive and pruritic erythematous involvement of the skin with only a few nodules of mycosis fungoides visible on the scrotum. One of his patients, fully described in a late memoir, is still in the hospital, but now wholly blind, a veteran syphilitic who had, after the production of a singular exanthem by ingested iodide of potassium, distinct cicatrization occur in the site of the departed lesions of the medicamentous dermatitis.

The Congress added largely to the literature of syphilis by the number and value of communications presented on this subject, as also upon all matters of venerealogy. The honors here were unquestionably carried off by Fournier, who received, after his admirable and thorough presentation of the subject of "tertiarisme" in syphilis, the longest and most prolonged applause of any speakers on all subjects. It was not due to his fine features and impressive presence, but rather to the admirable method of presenting his facts, illustrating by charts in the most graphic manner, the frightful preponderance of nervous syphilis among tertiary manifestations. Other papers by various authors covered effectually the ground from syphilis of the nose to syphilis of the vagina; from syphilis of the child to the same disease in the aged, including both Turk, Jew, and infidel. There were a number of important papers also on lepra, lupus, sarcoma, epithelioma, and tuberculosis.

Quinquaud read a paper describing his "hydradenoma," illustrated by faithful "moulages" and the patient from whom the casts had, some of them at least, been taken. However incredulous some of the members had been who had, before the demonstration, merely examined the casts and read the author's papers on the subject, it is safe to say that, after the session, many of them were really ready to admit that they had been confronted by a disorder with which they had been previously quite unfamiliar. As for the "pityriasis rubra pilaris" of the French, many examples of which were seen among the "moulages," it seemed possible, from observation of these after listening to the discussions, that some were forms of ichthyosis; some, of a superficial erythematous dermatitis; and some of a peculiar disease, perhaps distinct in character, occasionally associated with pilary disorder, to which the term pityriasis rubra pilaris could scarcely at all times be properly applied.

On the last day of the Congress it was voted to meet triennially hereafter; and, after a vote divided between London and Vienna, it was agreed that the next meeting, three years hence, should be held in the latter city.

The arrangements for entertaining foreign guests were all that could be desired. Dr. and Mme. Hardy received the members of the Congress at their residence on the Boulevard des Capucines on Tuesday evening. On Thursday evening the Municipality of Paris gave a magnificent entertainment to all the scientific congresses in session in the city, as well as to all the native and foreign students of science in the vicinity. The new Hotel de Ville, erected at an expense of nearly five millions and decorated at an expense of half a million of dollars, was thrown open from entresol to roof, and illuminated on the exterior of every floor with thousands of electric lights. It is estimated that ten thousand guests were in attendance. Four orchestras, a chorus of several hundred voices, and several large rooms devoted to refreshments, provided entertainment for the evening. The scene in the large salons was indescribably gay, in consequence of the varied costumes worn by the foreigners; the white turbans of the Mohammedans, the brilliant uniform of the officers of many nations, and the evening toilettes of the ladies furnishing bright and recurring contrasts.

The Congress was concluded with a dinner given to the foreign delegates by the resident members in the lower story of the museum of Saint Louis Hospital.

With this was concluded the largest, most successful, and most important convention of experts in skin and venereal diseases, from all countries of the world, that has ever assembled. There were two hundred and thirty-five in attendance. LANTERNE.

PARIS, August 10, 1889.

A WINTER VACATION TO THE WINDWARD ISLANDS.

IV.

IT requires many things to make any part of the earth's surface truly beautiful. The work of man, the manifold bounties of nature; the modeling of the earth when its plastic surface yields to the touch of the infinite Hand that makes all things well; heat, moisture, light—must all be infused with due proportion, to create a picture that shall live always in the memory.

Such a picture lay before us as the morning sun slanted through the defiles of the mountains and illuminated the Island of Grenada. The creeping shadows, the light stealing through the purple mists, the crenellated

hills, the towers and battlements of the graceful citadel, the red-tiled roofs, the groups of royal palms bending with exquisite grace from within the walls—mingled to produce a picture that almost made one believe that an enchanter's wand had been waved before one's vision, and that it was but the beauty of some exquisite necromancy made of the material wherewith poets dream and artists vainly seek to gather upon their canvas. But it was all there. A reality and an ideal. A picture created for the eternal glory of earth—beautiful Grenada.

When we landed Kingstown was in a ferment. It was Shrove Tuesday, when it is the custom of the negroes to masquerade in the streets. They traveled the streets in groups of five or six, each company arrayed alike as shepherds and shepherdesses, knights in tin armor and ladies in sweeping trains or soldiers with wooden swords and guns. They danced to the music of tom-toms, each group surrounded with dense crowds of spectators. In the afternoon the masquerade had developed into an orgy with gesture and motion so indecent that the ladies of the party were obliged to return to the steamer. The colored police were out in full force, especially about the market-place, which was densely thronged.

The town is most favorably situated for picturesque effect. It is built upon a peninsula that terminates seaward in a lofty crag, against which the surf rolls in with a grand dash of spray. Fort St. George crowns the summit with a sky-line of battlement and tower. It was built in 1710 and for the purposes of war is useless, but it is strong in the elements of beauty. Standing at the fort and looking landward the town is spread before you, bending over the crest of the ridge down to the peaceful waters of the bay upon one side, to the sea-front of the island on the other, where the Caribbean spreads its waves of unspeakable blue with its line of surf tumbling in nearly to the walls of the houses. Nearly all the buildings are roofed with red tile, which, with the variegated green of the foliage, affords a charming harmony and contrast of coloring.

I saw nothing of the ruin, decay, and poverty that Froude speaks of in his book, *The English in the West Indies*. I may say with old Père Labat two hundred years ago, "To live there was to live in paradise." A word about Froude and his book. He has succeeded in making himself cordially hated throughout the English West Indies. He is, I think, justly accused of being prejudiced and unfair, and describes the condition of islands that he never visited. From what I saw of the Windward Islands, I must say that his book is entirely unreliable. An answer to it has been published at Demerara, but the book was already out of print, and I was unable to get a copy.

The town is kept very clean by a system of drainage that appeared very nearly perfect for a hot climate. The drainage is exclusively on the surface in well-paved gutters, either in the middle or sides of the streets; every morning these are flushed out with water and swept with brooms. This is the plan in nearly all the Islands. The labor is generally performed by gangs of colored convicts under a guard of police. For a hot climate this appears the better way. Everything is in sight for cleaning and disinfection, and exposed at all times to the antiseptic action of air and sun. There are no sewers and traps to intercept and conceal filth in inaccessible places. That the method is a good one the good health of the Islands demonstrates. Yellow fever rarely gains lodgement to the extent of an epidemic. Smallpox is, however, the scourge of the Islands, and of which the people have great dread. Martinique had been quarantined against for over a year, and, as a rule, one or more of the Islands for the same reason is in that condition nearly all the time. Anything like general vaccination is impossible, as the negroes have a superstition against it.

After one of the most enjoyable days of the trip, at night we weighed anchor for the Island of Trinidad.

We were roused out of bed at gray dawn to see the *bocas* or mouths, the pass between the mainland of South America and the Island of Trinidad. All we could see were black rocks on either side through a thick veil of mist, which in a moment had blotted them out, when we were again in a world of fog. Before us was the Gulf of Paria. You enter it from the Caribbean by the Dragon's Mouth, and you may leave it, on the way to Demerara, by the Serpent's Mouth—another dangerous and romantic pass.

By the time the sun had dispersed the mist we were at anchor off the Port of Spain. This is the ground made famous by Charles Kingsley in *Westward Ho*. Buccaneer and forbau had gone, and before us lay a goodly city and about us a fleet of stately ships. The hills rose in a series of volcanic peaks, and on the plain at their feet was the city of the Port of Spain. A very pretty feature was the long line of cocoanut palms that grew at the water's edge. Aside from the shops, which were well stocked, the chief attraction was the coolies. They made a very picturesque addition to the usual street scenes. Those of my readers who have been to the East Indies know all about them, but as none of us had ever seen the coolie in the East, we spent a large part of the day in that quarter of the town. These poor fellows work under indentures to the government for five years. They are forced to labor. If they complain of being sick, they are sent to the doctor, and if found that they are not so, or only shamming, which they can do to perfection, they are sent back to work, and work they must or be fined. Many of them are under such arrears of debt that they will never secure their freedom. There was a settled look of hopeless misery upon many of the faces. The women were plump, and loaded with gold and silver coin and bracelets, their husbands having heaped upon them all their wealth. While the men were emaciated and naked to the waist, the women were strutting about in all the colors of a gaudy butterfly with bracelets from wrist to shoulder, necklaces of gold coin, and nose-rings. They were perfectly willing to sell their bracelets. I bought several from a woman who took them off as plump and pretty an arm as one would wish to see.

Trinidad has a population of several thousand coolies, many of whom are in trade. A jeweller sitting cross-legged before a little charcoal fire, built on the ground, was busy up to steamer time making us bracelets. He would make a very fine one out of a silver dollar, and charge twenty-five cents for his time. The coolies understood all about American coin, while the negroes would not touch it. It is owing to the enforced labor of the coolie that sugar planting is profitable at Trinidad and Demerara. The negro is perfectly content to look on. He does not love to work.

Hindoo priests were very numerous, taller and lighter colored than the others, clad in costly, many colored gar-

ments and well fed. They appeared to have unlimited authority. At one place we found a temple in full operation, after passing several which were closed. The building was octagonal in form with doors upon three sides. Opposite to the main entrance sat, cross-legged, a dignified-looking priest; before him, seated upon the ground, were two men pounding upon small drums; near by, seated in the same way, was a man teaching a boy to write. The man upon the platform twirled his thumbs, the people passed by in a steady stream and gave no attention. All day long the drumming never ceased and the people never heeded. I asked a negro, who told me that he was a Methodist, what it meant. "O! they's hired to do that, Sir; that's the way they has their praying done."

The Hindoo repays the contempt of the negro a thousand-fold. He belongs to a lordly race; slave as he is, he would not touch the body of a freeborn negro. And, inded, he has right upon his side; you have but to see them together to realize that he comes from a nobler race and is the better man.

The Port of Spain is counted among the hot places of the earth. It is shut in by the crests of the hills and mountains, which follow the trend of the coast. Before it, across the fresh water Gulf of Paria, is the wide and malarious delta of the Orinoco. The average yearly temperature is 80°. The health authorities are vigilant. The gutters are flushed, cleaned, and disinfected every morning, and in addition nature has provided a sanitary inspector who is ever on the watch. This is the large crow, as it is called here—a bird of that form and color, but as large as a turkey. I witnessed one of their sanitary operations near the landing on my return to the ship. As I sat waiting for the boat I saw that a dog lay upon the ground *in articulo mortis*. In a short time his struggles were over, and at the same time I observed a crow approaching him in a critical and guarded way as though he feared the animal might be sleeping, but to the expert eye the attitude was unmistakable, and it pounced upon him with a wide flutter of wings. Instantly from housetops, telegraph poles, and invisible regions of the sky the crows came in scores, and where the dog lay was a writhing, screaming, struggling mass of horrible black, and in a few moments nothing was left, not even bones. These birds are protected by law, but they are unpleasant and uncanny creatures.

ELY VAN DE WARKER.

NEWS ITEMS.

Organization of the International Congress of 1890.—The following delegates from the various faculties and medical societies of Germany will act as the Committee on organization of the International Medical Congress of 1890, and will hold their first meeting at Heidelberg in September.

The *Faculties* will be represented as follows:

Berlin, Prof. Virchow; Bonn, Prof. Binz; Breslau, Prof. Biermer; Erlangen, Prof. v. Zenker; Freiburg, Prof. Hegar; Giessen, Prof. Löhlein; Göttingen, Prof. König; Greifswald, Prof. Mosler; Halle, Prof. Hitzig; Heidelberg, Prof. Czerny; Jena, Prof. Kuhnt; Kiel, Prof. Heller; Königsberg, Prof. Lichtheim; Leipzig, Prof. His; Marburg, Prof. Schmidt-Rimpler; Munchen, Prof. v. Ziemssen; Rostock, Prof. v. Zehender; Strasburg, Prof. Jössel; Tübingen, Prof. v. Jürgensen; Würzburg, Prof. Schönborn.

The leading *Medical Societies* will be represented as follows:

Anatomical Society, Prof. Schwalbe, of Strasburg; Congress for Internal Medicine, Prof. Leyden, of Berlin; German Surgical Society, Prof. v. Bergmann, of Berlin; German Society for Gynecology, Dr. Martin, of Berlin; Ophthalmological Society, Prof. Becker, of Heidelberg; Society of Mental Specialists, Dr. Laehr, of Zehlendorf; Balneological Society, Dr. R. Brock, of Berlin; German Dermatological Society, Prof. Neisser, of Breslau; German Dental Society, Dr. Fricke, of Kiel; German Association of Physicians, Dr. Graf, of Elberfeld.

The local Medical Associations will be represented as follows:

Drs. Baumgartner, Fränkel, Crocker, Busch, Trendelenburg, Heidenhain, Carl Weigert, Kast, O. Boeck, v. Ziemssen, Wicherkiewicz, Kugler, Naunyn, Berlin, Leichtenstern, Fiedler, Pletzer, Schulz, and Schrickel.

French Hospitals in the Orient.—We learn from the *Union Médical* for August 17th that a French Medical Missionary Society is being formed in Paris. This Society intends to establish schools and hospitals in Africa and the Orient, in order to counterbalance the power of existing English and German Medical Missionary Societies, "which," the *Union Médical* supplements, "are created merely in order to combat the influence of French medicine, which has hitherto predominated." This is a new light on missionary enterprize.

The American Society of Microscopists.—The annual meeting of this Society began its deliberations August 20th, at Buffalo, N. Y. Dr. Lucien Howe presented a medical subject, dealing with microscopic growths on the normal and diseased eye. Dr. George E. Fell reported on some studies of the testicular solutions made according to the method of Brown-Séquard.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE TWO WEEKS ENDING AUGUST 24, 1889.

ROGERS, B. F., *Surgeon.*—Detached from U. S. S. "Alliance," and wait orders.

HARMON, G. E. H., *Surgeon*—Ordered to U. S. S. "Constellation," August 13th.

LOWNDES, C. H. T., *Assistant Surgeon.*—Ordered to the U. S. S. "Constellation," August 13th.

DECKER, C. J., *Assistant Surgeon.*—Detached from the U. S. S. "Lancaster," and granted four months' leave of absence.

BALDWIN, L. B., *Passed Assistant Surgeon.*—Detached from U. S. S. "Ranger," ordered home, and wait orders.

HARVEY, H. P., *Surgeon.*—Ordered to the U. S. S. "Ranger."

LOVERING, P. A., *Passed Assistant Surgeon.*—Ordered to the Receiving-ship "Wabash," at the Boston Navy Yard.

SIEGFRIED, C. H., *Surgeon.*—Ordered to the Naval Station at New London, Connecticut.

SCOFIELD, W. K., *Medical Inspector.*—Detached from the "Lancaster."

HIBBETT, C. T., *Passed Assistant Surgeon.*—Detached from the "Lancaster."

WHITE, C. H., *Medical Inspector.*—Ordered to the "Pensacola."

HESLER, F. A., *Passed Assistant Surgeon.*—Ordered to the "Pensacola."

CURTIS, L. W., *Passed Assistant Surgeon.*—Ordered to the "New Hampshire."

JONES, W. H., *Surgeon.*—Detached from the "Pensacola," and placed on waiting orders.

VON WEDEKIND, L., *Assistant Surgeon.*—Detached from the "New Hampshire," and ordered to the "Pensacola."

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, SEPTEMBER 7, 1889. NO. 10.

ORIGINAL ARTICLES.

THE CLIMATIC TREATMENT OF BRONCHIAL ASTHMA.[1]

BY FREDERICK I. KNIGHT, M.D.,
OF BOSTON.

IF one seeks information on the selection of a suitable climate for an asthmatic patient, he will soon realize that no successful attempt has been made to establish indications for preference of one climate over another for any given case of asthma; that changes of climate have been made usually in an experimental way, and have been as likely to be attended with aggravation as relief to the symptom.

The chief cause of this is the mistake which has been made in trying to reduce all cases of asthma to one class, assuming that the ultimate cause and mode of development of this symptom were the same in all cases. This has led to the origin and promulgation of different theories, which have been in turn supported and abandoned. We find, in looking over the literature of the subject, that at one time asthma has been considered almost exclusively as a bronchial spasm of local origin, and treatment appropriate to this condition recommended; at another time, the theory of hyperæmia of local origin has received much favor; and at still another, the reflex origin (at one time of spasm, and at another of hyperæmia) has been dwelt upon.

This habit of the human mind, of looking at only a part of the truth, was characteristically urged by Dr. Daly in his paper at the last meeting of this Association. This is especially true of the medical mind, and the inevitable result of specialism in practice has been to increase this tendency.

The ease of error of the medical man is greater than that of the blind men in Tolstoi's fable, because, while he may soon learn to interrogate all parts of the animal brought to him for examination, he will also soon be made aware that there is a great variety of animals. The specialist is familiar with one kind of asthma, according to his field of practice. The asthmatics who go to a rhinologist are naturally those who have trouble in the nose; the asthmatics whose symptoms are wholly thoracic consult some one of repute in that field; and this leads to the result that Dr. Bosworth[2] tells us, that he has found evidence of intra-nasal disease in every case of eighty asthmatics on his note-books, in sufficient degree to warrant the conclusion that it exercised a powerful causative influence in the production of the asthmatic attacks.

It has also led Dr. Hyde Salter[1] to say that eighty per cent. of cases of asthma in the young date from some acute inflammatory affection of the lungs, and has led Berkart to put the proportion due to this cause as high as ninety per cent.[2]

The dermatologist would tell us, perhaps, that he had seen asthma almost invariably associated with eczema, and the syphilogian might say that he had never seen a case of asthma without syphilis. The fact is, that asthma is only a symptom, and the factors whose combination produces a paroxysm are not always the same.

I should agree to the combination given by Dr. Bosworth as applying to a large class of cases, including most of the hay-fever cases. This combination was: 1. The neurotic habit. 2. A diseased condition of the nasal mucous membrane. 3. Some peculiar atmospheric condition, which precipitates the paroxysm;—*i.e.*, we have a predisposing, a determining, and an exciting cause. In order, however, to make this applicable to asthma in general, I should consider it necessary to make the second and third conditions more comprehensive. The second might be stated as a morbid condition somewhere in the respiratory tract, it may be in the upper air-passages or in the lungs themselves, whose irritation shows itself by a reflex exhibition in the bronchial tubes. The third condition should be made to include not only peculiar atmospheric states, but also digestive derangement, mental disturbances, and other remote irritations which act by reflex on the bronchial tubes.

It should always be borne in mind also that we may have more than one of the conditions mentioned under the second and third classes operative at once. For instance, we may have nasal disease and some change in the lung structure coöperating in the same patient, and also more than one of the exciting causes operative at the same time. This should lead us to be guarded in prognosis, and not to be too confident of cure because we have detected a single factor which is capable of removal. Who has not

[1] Read before the American Climatological Association, June 25, 1889.

[2] American Journal of the Medical Sciences, Sept. 1888.

[1] On Asthma; its Pathology and Treatment. New York, 1882, p. 78.

[2] On Asthma; its Pathology and Treatment. London, 1878.

seen asthma persist after removal of nasal polypi, or after removal of a patient from a pollen-laden air which seemed to be the exciting cause of the attack?

In regard to the coëxistence of different factors for the production of bronchial asthma it may probably be said that only the second and third are absolutely necessary, and that while the first (the neurotic habit) is a pretty constant factor, a paroxysm may be produced without it when the determining cause (second factor) is situated in the lung itself. In considering the effect of climate upon the paroxysm it can readily be seen that its effect upon each of the factors should be studied separately; and, if either factor can be eliminated or seriously modified by climatic change, then the attacks will cease.

It thus becomes more explicable why entirely different climates relieve different cases of asthma, or even the same case at different times. Who has not seen a patient completely relieved by change of climate for a number of years, perhaps, and afterward, the symptoms returning, be again relieved by another move, perhaps even back to the starting-point? Now, in such case it is very likely that the patient, while strengthened in one factor, was gradually weakened in another till the paroxysm was again developed, to be again prevented by variation of influence.

When, therefore, a case of bronchial asthma presents itself to us, and we are called upon to break the "vicious combination," we try to determine which of the essential factors is most easily removed or modified.

The third factor (the exciting cause) is the one which is apt to engage the attention first, and it may be oftentimes easily removed. When the exciting cause is atmospheric, it may be some variation in the proper constitution of the air, or it may be the presence of accidental emanations, as the pollen of plants, the odor of animals, or animal or vegetable products. When the latter condition obtains and is once recognized, the patient may be able to keep himself out of the reach of the excitant, and, as is well known, an army of hay-fever subjects keep themselves well in this way by an annual exodus to exempt districts.

The well-known susceptibility of asthmatics to paroxysms in the country as compared to the city may likewise sometimes depend upon the presence of vegetable or animal emanations in the country air. In other cases it seems to be the atmosphere containing the most carbonic acid which affords the most relief; hence, the old, crowded portions of the city are looked upon by certain asthmatics as the abodes of bliss. This accords with the recent reports of cases of "dyspnœa" relieved by inhalations of carbonic acid gas.

A change in the density of the air sometimes affords marked relief. It is well known that removal to a high altitude relieves certain cases. These may be such as have for a determining cause some morbid condition of the bronchial area, in which a slight superficial hyperæmia and relative internal anæmia may relieve the paroxysm, and the variation in pressure at different altitudes may be enough to determine this. Instances of digestive derangement and nervous disturbance as exciting causes of asthmatic attacks are too well known to need illustration. I once had a gentleman patient recently married who almost always had an attack on sexual intercourse. I had another patient who could stop an attack by gambling for high stakes.

In regard to the possibility of so modifying the second factor (a morbid condition somewhere in the respiratory tract, which may be called the determining cause) that the combination shall fail, it may be said that this is sometimes easy and sometimes impossible. When the lesion is accessible to operation, as in the nose, this may be easy; when it is below the reach of operative methods, it may be very difficult or impossible. Perhaps the most brilliant results in the latter field are seen in the cures wrought by the potassium iodide. This remedy is especially efficacious in those cases in which there is evidently a catarrhal inflammation of the bronchial mucous membrane. These cases are also quite susceptible to a proper change of climate—*i. e.*, such a change as we have reason to believe would benefit the bronchial or pulmonary lesion. As to the possibility of so modifying the first factor as to prevent the attacks, I should say that while we may sometimes be successful in warding off the paroxysm by fortifying the nervous system with good hygiene and specific tonics, we will be less successful in this mode of attack than in either of the others. So, also, we may occasionally, in cases in which the neurotic factor is a prominent one, succeed in so modifying it by change of residence as to effect a cure in this way.

So it will appear that in climatic, as in medical, treatment we must make our application to the ascertained condition of the patient, as far as it is possible to diagnosticate this, and not to the name of a disease. There is no climate which is good for all cases of asthma, and we must carefully consider, when a patient presents himself for treatment, the nature of these three factors in his case, and which of them we intend to modify, and how far change of climate may be able to aid us in this.

A CYST OF THE PHARYNGEAL BURSA.

BY JONATHAN WRIGHT, M.D.,
OF BROOKLYN, N. Y.

THE name pharyngeal bursa, first given to a structure often found in the naso-pharynx by Mayer, is, in the light of more recent researches, probably a

misnomer, inasmuch as it implies that an anatomical structure of that description exists in the normal naso-pharynx. As such it was regarded by Mayer, Tourtual, Luschka, and, in recent years, by Tornwaldt.[1] Ganghofner suggested the name recessus medius in contradistinction to the recessus laterales of the pharyngeal tonsil, as more in keeping with its anatomical character. The former term, however, has become so fixed in the minds of laryngologists and is so in accordance with the form in which it comes under their observation, that it would be useless to attempt a change of name.

Mayer's[2] description quoted in full by Bloch is as follows:

"This pharyngeal bursa exists as a sac in the mucous membrane, covering the body of the sphenoid bone behind the choanæ, or rather, immediately behind the perpendicular plate of the vomer. Occasionally this sac reaches a size large enough to hold a cherry-stone. I have occasionally found it double or divided in the median line by a septum. . . . Occasionally there is an opening into the sella Turcica or into the body of the sphenoid, but usually this is so small that one might easily take it for the nutrient canal of the bone."

Luschka agreed with Mayer and regarded it as a remainder of fœtal life, a remnant of the pharynx, and connected with the hypophysis cerebri. He stated that it was not found in all subjects.

Dursy, Ganghofner, and Schwabach studied the subject from an embryonal standpoint and have pretty conclusively settled its true character. They have explained the manner in which the condition arises, which was stated by the earlier writers and by Tornwaldt and others in later years to be a normal structure. Ganghofner described the so-called "bursa pharyngea" as a more or less deep depression or cavity in the mucous membrane of the naso-pharynx, posteriorly in the median line and just anterior to the tuberculum pharyngeum. Its first indication in a three months' embryo is a little fossa about the size of a pin's head, a slight depression in the mucous membrane.

In the newborn the fossa is one or two millimetres deep and at the bottom is occasionally seen a little ridge or fold. In children two or three years old this furrow-like depression has developed into a marked recess between the median folds of the naso-pharynx, and usually has an oval or elliptical opening. He denied its connection in any way with the hypophysis cerebri.

Schwabach says:

"Both in preparations with marked formation of folds as well as in those where it is lacking there can be found in the median line, at the end of the median furrow, occasionally a little depression of about the size of a pin's head, which is usually bounded posteriorly by a thin fold of mucous membrane; but this never has any opening which could be regarded as the mouth of a sacciform diverticulum. In other preparations the median furrow ends, posteriorly, quite flat, without the trace of any depression."

He states further, that probably what Tornwaldt found was nothing but the median furrow of the pharyngeal tonsil, which, in some cases, by the adhesion of the surfaces of the median folds through inflammation, is converted into a canal open at one or both ends. When the mouth of this canal becomes closed we may then have a retention-cyst formed of varying dimensions. It is possible for this to occur in other parts of the pharynx where the folds of the pharyngeal tonsil lie in close apposition. I believe, from clinical observation, that this is the true explanation of this much-debated anatomical point. The frequency of inflammation in the post-nasal space is an ample explanation why such good anatomists and clinical observers regarded its results as a normal condition.

Czermak, the father of laryngoscopy, was the first to see (in September, 1860) in the rhinoscopic mirror the image of a cyst of the post-nasal bursa. He gave a good description of its appearance, but, of course, was ignorant of its true character. Eighteen years before this, Mayer, as we have seen, had described them from post-mortem investigations. Von Troeltsch, in 1859, described a cyst found in the naso-pharynx of a subject who had died from the effects of various aural troubles. Luschka also speaks of having found post-nasal cysts. Zahn, in 1885, described three cases of post-nasal cysts found post-mortem, and gives a full microscopic and macroscopic description of them.

Up to this date these are all the cases I can find mentioned in literature. Tornwaldt then brought forward his work on the pharyngeal bursa which has attracted such wide attention and commendation. He reported having seen in two years 45 cases of cysts of the pharyngeal bursa out of the 202 cases of disease of this bursa. This large number is certainly very surprising, and he attempts to explain it by the suggestion that the attention of special workers in this field had not as yet been called to the affection.

Although many observers in the last four years, since the appearance of Tornwaldt's paper, have written on the inflammations of the pharyngeal bursa, the assertion of Tornwaldt in regard to the frequency of cysts in that situation has not been supported. Walb, who is an enthusiastic admirer of Tornwaldt's paper, and who gives a careful report of forty cases of disease of the bursa, says he has never seen a case of cyst formation, while the proportion of Tornwaldt's observations is one cyst out of five cases of

[1] Tornwaldt claims elsewhere (Deutsch. med. Woch., Nos. 23 and 48, 1887) that he left the question of its anatomical character open.

[2] It is but fair to say that I have had to depend upon the very numerous and extensive reviews of the monographs of Mayer, Tourtual, Luschka, Tornwaldt, Ganghofner, and Dursy, as the originals were inaccessible to me.

bursal disease. I have made inquiry of many American laryngologists, and I have not as yet found one who has ever seen a case of true cystic growth in the situation of the post-nasal bursa. I am, of course, very far from believing that further inquiries would fail to elicit a different answer, but it is impossible for me to understand the frequency of cyst formations reported by Tornwaldt, to whom, however, is due the great credit of directing the attention of specialists to diseases of this region. Lehman has lately reported a large congenital cyst. Srebrny and Schaeffer each report one case of bursal cyst. The latter author, as well as Mégevand and Suchannek, with many others to whom it would be superfluous to refer, have made long and, some of them, valuable contributions to the subject.

For the thorough examination of the post-nasal space much patience, skill, and experience in the use of the rhinoscopic mirror are frequently necessary. The finger is the most reliable means of diagnosis in intractable cases. I have faithfully and persistently tried many kinds of palate hooks and palate retractors, and, though I am still open to conviction on the subject, I have about arrived at the conclusion that where you need a palate retractor you cannot use it, and where you can use one you do not need it.

In the case reported below, and which will serve as an excuse for what has gone before in reviewing the subject, the size of the cyst is certainly very rare, however frequent the smaller ones may be. Notwithstanding the amount of post-nasal obstruction in the case, however, the patient suffered remarkably little inconvenience from it. I may, furthermore, remark that this is the only case of the kind I have ever seen, though I have examined, since my attention was called to it two years ago, between two and three thousand cases of nasal or laryngeal troubles.

A. M., æt. seventeen, by occupation a bookkeeper, presented himself in May, 1887, at the Demilt Dispensary. His family history was negative. He had bronchitis (?) when small. He has always been more or less subject to sore throat with external "swellings" on the sides of the neck. He has been troubled for some time with excessive expectoration and dropping in the back of the throat. Occasionally his nose is stopped up. He breathes a great deal through his mouth. While annoying, none of his symptoms has ever been distressing. He is a well-nourished boy of fairly healthy appearance. His expression is somewhat vacant, his voice a little husky, and his hearing not acute.

Examination shows large tonsils which are diffused, stretching down to and being continuous with the large glands at the base of the tongue, and with the post-pharyngeal wall, which is thickened and has at times a dry and glazed appearance. The tonsils also extend high up between the pillars of the fauces. On account of this obstruction no posterior rhinoscopic examination can be made. The anterior nares are comparatively free. The vocal cords are somewhat congested.

By the continued and persistent application of the galvano-cautery to the tonsillar hypertrophies, after many weeks an amount of room was gained which allowed me to see that the pharyngeal vault was much lower than normal, and that the post-pharyngeal wall almost touched the soft palate. On introducing the finger, the pillars of the fauces grasped it with a powerful constricting action which was very marked, but I was able to map out fairly well a large, smooth, globular mass extending from the vault near the septum down on to the post-pharyngeal wall. It was of about the size and shape of a pecan nut, with its long axis from above downward. The walls seemed thin, and there was distinct fluctuation. On very moderate pressure backward with the back of my finger the cyst suddenly gave way with an almost audible snap. A clear, slightly viscid fluid could be seen trickling down the post-pharyngeal wall.. The finger could now be inserted into the interior of the cyst cavity, and the walls were felt to be thick at their base, thinning out to the point of rupture.

They were continuous with the pharyngeal mucous membrane, in the layers of which the cyst had evidently developed. No adenoid vegetations could be made out, either with the finger or with the rhinoscopic mirror. By means of post-nasal forceps large portions of the cyst-walls were removed from time to time, but, unfortunately, no microscopic examination was made. By means of galvano-cautery and the cutting forceps the pharynx was gradually cleared out. For a long time there was great thickening of the pillars of the fauces and distinct ridges—median folds (?)—could be seen on the mucous membrane at the former site of the tumor. There was soon a decrease of the secretions which had annoyed the patient, and he was able to breathe freely through his nose. For a long time after the operation, on gargling, the fluid would always pass into his nose. This, however, disappeared as the thickened condition of the faucial pillars abated. The patient was under treatment for nearly nine months, and when last seen, a few months ago, he had a fairly normal pharynx, though the tendency to catarrhal inflammations on exposure to cold was still marked.

Bibliography.

Mayer: Neue Untersuchungen aus dem Gebiete der Anatomie und Physiologie. Bonn, 1842. *Tourtual:* Neue Untersuchungen über den Bau des menslichen Schlund und Kehlkopfes. Leipzig, 1846. *Luschka:* Der Schlundkopf des Menschen. Tübingen, 1868. *Tornwaldt:* Ueber die Bedeutung der Bursa Pharyngea für die Erkennung und Behandlung gewisser Nasenrachenraum Krankheiten. Wiesbaden, 1885. *Ganghofner:* Die Tonsilla Pharyngea und die Bursa Pharyngea. Sitzungsbericht der k. Akad. d. Wissenschaft lxxviii. 3 Abth., Oct. 1878. *Bloch:* Berliner klin. Wochenschr., No. 14, 1888. *Dursy:* Zur Entwickelung des Kopfes des Menschen und der hoheren Wirbelthiere. Tübingen, 1869. *Schwabach:* Archiv. für Mikroscop. Anat., 1887, Band 29, S. 61. *Czermak:* Der Kehlkopfspiegel und seine Verwerthung für Physiologie und Medizin. Leipzig, 1863, p. 127. *Von Troeltsch:* Virchow's Archiv., Bd. 17, S. 78. *Zahn:* Deutsche Zeitschrift für Chirurgie,

1885, Bd. 22, S. 392. *Walb:* Erfahrungen auf dem Gebiete der Nasen und Rachen Krankheiten. Bonn, 1888. *Lehman:* Archiv. f. klin. Chirurg., 1888, p. 221. *Srebrny:* Ref. Centralbl. f. Laryngologie, etc., June, 1889, p. 609. *Schaeffer:* Monatsch. f. Ohrenheilkunde, No. 8, 1888. *Mègevand:* Thèse inaugurale. Geneva, 1887. *Suchannek:* Habilitationsschrift. Jena, 1888.

For a more complete bibliography, see the recent and very interesting communication of Dr. Gellé in the *Annales des Mal. de l' Oreille*, etc., No. 5, 1889.

73 REMSEN ST., BROOKLYN.

NOTE ON INTRA-THORACIC GROWTHS DEVELOPING FROM THE THYROID GLAND.

BY WILLIAM OSLER, M.D.,
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY, BALTIMORE.

IT has been shown that portions of thyroidal tissue may be met with anywhere from the base of the tongue to the heart, and in regions lying between these points the so-called struma tumors may be found, or even in rare instances within the trachea. Thyroidal growths also occur within the thorax, most commonly sub-sternal in position, and connected directly with the gland. Of these a number have been described (Virchow, *Geschwülste*, Bd. 3). More rarely tumors develop from the deeper portions or aberrant bits of a lateral lobe and extend into the chest, forming large intra-thoracic growths.

A most remarkable case is reported by Dettrich (*Prager med. Wochenschrift*, No. 31, 1887). In a woman, aged sixty, who had suffered for some time with cough and hæmoptysis there was found, filling the greater part of the right side, a cystic tumor the size of a man's head. It was covered by the parietal pleura and naturally caused great compression of the lung. Above, it was connected with the right lateral lobe of the thyroid. The cyst had yellowish-brown contents and contained cholesterin. Kretschy (*Wiener med. Wochenschrift*, 1877) describes a sarcoma of the thyroid, four and three-quarters inches in length, which formed an extensive mediastinal tumor passing to the level of the ninth dorsal vertebræ.

In the following case, No. 702, Post-mortem Records, Montreal General Hospital, there was a tumor similar in situation to Dettrich's, though not so large:

The patient, a woman, had died with symptoms of purulent bronchitis. There was no special emaciation. Occupying the top of the left thoracic cavity, outside the pleura, was a mass the size of a large orange, closely attached to the œsophagus. The arch of the aorta lay on the right side, the left subclavian passed directly over it and the left carotid passed just beside it. There was no special connection with any thoracic organ, though filling completely the top of the left thorax. There was a large bronchocele, the left lobe of which was in contact with the tumor and could not be isolated from it.

On section, it consisted of a series of imperfectly separated cysts containing a yellow-brown fluid in which were plates of cholesterin. The upper part of the tumor was firm and hard; some of the septa had calcified, others had a fibro-cartilaginous consistence.

The relations of this mass, its anatomical character, and the nature of the contents of the cysts, identical with that which is found in so many cases of old bronchocele, leave no question that it had developed from an outlying lobule of the left thyroid.

In connection with the case of Kretschy, above referred to, a somewhat similar instance was reported by me a few years ago (*Montreal General Hospital Reports*, Vol. I., 1880):

A girl, aged sixteen, had been under treatment for what appeared to be ordinary bronchocele. It had grown with great rapidity. There was marked difficulty in breathing and the question of tracheotomy was considered, but, as the dyspnœa became easier, the operation was deferred. Death occurred suddenly. Post-mortem, a tumor was found which involved exclusively the left lobe of the thyroid and formed a large round mass eight inches in circumference; above it extended to the level of the thyro-hyoid ligament, while below it passed down beside the trachea to the bifurcation. From behind, the mass had an elongated, somewhat oval shape; the lower end rested upon the left bronchus. Along this surface it measured one and three-quarters inches in length. At the upper right angle of the mass in front was a small thin remnant of the left lobe capping the tumor, the tissues of the two blending, not separated by a capsule. The right lobe of the thyroid was of normal size and appearance. Histologically the growth consisted of small lymphoid corpuscles.

I reported this case as one of lympho-sarcoma of the deep cervical glands involving the thyroid and simulating goitre, but I have no doubt now that it was a case similar to Kretschy's, in which the growth developed from a thyroidal lobe with extensions down the trachea.

INSTITUTIONS FOR THE TREATMENT OF PULMONARY CONSUMPTION IN THE UNITED STATES.[1]

BY PAUL H. KRETZSCHMAR, M.D.,
CONSULTING PHYSICIAN TO THE GERMAN LUTHERAN HOSPITAL OF BROOKLYN, N. Y.

PHTHISO-THERAPY has not made any decided advances during the last year, although the use of hot air by means of inhalation and the internal administration of pure vegetable creasote have claimed considerable attention of the profession, and both possess a certain degree of value which entitles them to further investigations and clinical trials. Our knowledge in regard to the mode of contagion, and with it the power to prevent the disease, has largely increased. Thanks to the careful investigations of Dr. George Cornet, of Berlin, we know to-day that

[1] Read before the American Climatological Association, June 25, 1889.

the phthisical patient *per se* is *not a source of danger* to his surroundings, and that pulmonary consumption is spread broadcast principally by carelessness and ignorance.

The question whether or not consumptives should be treated in institutions conducted for that special object has been discussed both here and abroad, and, while the sanitarium treatment is considered now as giving the best possible chances for recovery from consumption in its early stages, by the profession in Europe, there seems still to exist considerable difference of opinion on that subject among physicians in this country. Dr. George Cornet's experiments will do much to strengthen the case of those who advocate sanitarium treatment for consumptives, and they must necessarily help to overcome such opposition as was expressed recently by my friend, Dr. Samuel A. Fisk, in the president's address read before the Colorado State Medical Society, entitled "The Cottage Plan of Treating Consumption in Colorado."[1] Dr. Fisk does not by any means advise "cottage treatment" such as will be spoken of in this paper, but he declares himself in favor of treating consumptives in open health resorts rather than in institutions established for that purpose.

Dr. Fisk makes a fatal admission to correctness of the views he expresses, by stating and describing a number of cases which occurred in his own practice where great harm was done by over-exercise, and adding that such irreparable injury might have been guarded against in a properly conducted sanitarium. Dr. Fisk, and with him most practitioners who are honest in their opposition to special institutions for the treatment of pulmonary consumption, seems to overlook the fact that overtaxation of heart or lungs is one of the greatest dangers to which consumptives are exposed, and many lives of patients, doing apparently well, are lost by it. It is probably true, as Dr. Fisk states, that the results obtained in Colorado are excellent, but does that prove that sanitaria are not needed there? Would not the excellent results obtained in Colorado be still better if there were fewer cases where lives were sacrificed by mismanagement?—"cases which recur to each of Dr. Fisk's hearers."

The arguments which he uses against sanitarium treatment are by no means new. They are: 1, that patients do not like to be under constant supervision and control; 2, that a cheerful mental condition has a great part to play in effecting a recovery, and that it is inadvisable to congregate invalids where their thoughts are constantly employed in comparing notes with fellow-invalids and where they are subjected to the depressing influence that necessarily surrounds disease; and 3, that a congregation of phthisical patients render any air, aseptic in itself, very foul and septic. In framing these arguments Dr. Fisk must have been unconsciously influenced by a desire to place the *existing* conditions of his own State in the best possible light.

The first objection raised by Dr. Fisk shows that he does not yet recognize the personal control of consumptive patients—extending, as it should, to the smallest detail of every-day life—as a *conditio sine qua non* for giving them the greatest chances for a cure, though his own cases, which suffered so much by overexercise, etc., should have taught him the lesson.

The second and third objections might be used with just as much force against any *open health resort* where a large number of consumptives live in search of health—as in Denver, Colorado Springs, Georgetown, Aiken, Davos, Mentone, etc.; as a matter of fact, the third objection might very properly be used in favor of sanitaria treatment over open health resorts, where the patients live in badly arranged hotels or boarding houses, and where little or nothing is done to prevent the possibility of having the air loaded with tubercular bacilli, due to the carelessness of patients or their attendants. In a letter to the writer, dated May 12, 1889, Dr. E. L. Trudeau, of Saranac Lake, discussing Dr. Fisk's paper, describes the means employed at the Adirondack Cottage Sanitarium to prevent expectorations from becoming a source of danger to the inmates, and says:

> "The proof that with these restrictions no injury results to the patient, lies in the fact that my results are *better at the sanitarium than at the hotels*, and Dr. Fisk's argument, though plausible theoretically, falls to the ground when the most practical test—that of actual results—is applied."

In regard to another argument used by Dr. Fisk, Dr. Trudeau says:

> "His other objection—namely, that much depression of spirits must result from seeing so many others suffering from the same disease, is not, in my experience, supported by facts. I find that my patients at the sanitarium suffer from depression no oftener than those I have in private practice. The former seem to recognize the fact that they are 'all in the same boat,' that a disinterested effort is being made to save them by persons who have extensive experience in the matter, and, as a rule, they aid the physician cheerfully in his task. During the last five years only three patients left the sanitarium on account of home-sickness."

Dr. Trudeau makes this strong statement: "*If anything is to be done for those who are both poor and consumptive, it cannot be done outside of an institution*," and, after a very careful study of this subject, I have arrived at convictions which induce me to say, even stronger than Dr. Trudeau, *If anything is to be done tending to restoration to health for those who are consumptive, whether rich or poor, it can be*

[1] THE MEDICAL NEWS, May 4, 1889, p. 480.

accomplished with the greatest promise of success in a properly located and rationally conducted institution.

To bring about the best results, such institutions should be erected in regions whose climatic influences are known to be favorable to consumptives, places where consumption is known to be rare among the natives, in a moderately high altitude, not close to large cities, in the neighborhood of evergreen forests; they must be located so as to be protected from severe wind-storms; they should have enough cultivated path immediately around them to make exercise possible during all seasons of the year; sunshine and shade should be in proper proportion; the drainage must be perfect, and the water of the purest. The cottage or pavilion system seems to be best adapted to answer all the requirements; all buildings must be erected with their special object in view. The management of such institutions should be intrusted only to physicians of ability, large experience, and great love for their special work.

One feature which is more difficult to overcome than others is the tendency of patients to leave the institution long before they have secured all the benefits the sanitarium can give them. Patients should never think of staying less than seven or eight months, and they should know that six or eight weeks' residence at the very best of institutions will be of no permanent benefit whatsoever. Changing places on account of the season is not advisable as a rule.

Sanitaria for the cure of consumption have existed for many years in Germany, where Dr. Herman Brehmer started his now celebrated place in Goerbersdorf thirty-five years ago, and where successful institutions are now in operation in Falkenstein in the Taunus, at St. Blasien in the Black Forest, at Reiboltsgrün in Saxony, at Rehburg in Westphalia, in St. Andreasberg, and in Blankenbain in the Harz mountains. In this country Dr. J. H. Tyndale made an effort about ten years ago in Manitou, Colorado, and Dr. H. Gleitsmann before him, in Asheville, N. C., to establish similar institutions, but both failed from lack of professional support.

The interesting paper read by Dr. Alfred L. Loomis before the Medical Society of the State of New York, in 1879, on "The Adirondack Region as a Therapeutical Agent in the Treatment of Pulmonary Phthisis," and the very favorable results obtained personally by Dr. E. L. Trudeau, during a residence for over ten years in that portion of the Empire State, induced a number of benevolent ladies and gentlemen, under the lead and guide of Dr. Trudeau, to make an effort for the establishment there of an institution for the treatment of phthisical patients of limited means, and, in 1884, a moderately sized main building, two cottages (each of which accommodates two patients), and a stable were erected, and given the name "The Adirondack Cottage Sanitarium." Thanks to the philanthropy and the unselfish work of Dr. E. L. Trudeau, and to the kind support given to him by Dr. Alfred L. Loomis and others, this establishment has grown from year to year, and consists to-day of an enlarged main building—two wings having been added to the original—and eight fully equipped cottages, with three more almost completed, thereby offering facilities for over fifty patients. The feature which distinguishes this from other institutions of the same kind is the fact that the patients are not crowded together in one or two palatial houses, but that they live almost in the open air, in small cottages scattered over quite an area. These cottages are but one story high, elevated from the ground enough to prevent them from becoming damp, with a veranda in front and partly around each; they are supplied with running water, and with open fire-places. The smaller cottages are planned for two patients, the larger ones for four; the latest of these buildings all have a general sitting-room and a separate one for each patient. The partitions between the bedrooms are of mason work, and reach to the ceiling, while those dividing the sitting from the sleeping department are only seven feet high, thus allowing free circulation of air throughout the whole building.

The location of the Sanitarium is a very pleasant one, about 1750 feet above tide-water, covering an area of over eight acres, about one mile from Saranac Lake and seven miles from Paul Smith's; it is situated on a bluff commanding a grand mountain view toward the north and east, well protected from the prevailing eastern winds. The Chateaugay Railroad, running from Plattsburgh to Saranac Lake, a distance of seventy-three miles, was opened about one year ago and has removed one of the very few objectionable features of the Adirondack Cottage Sanitarium, its inaccessibility. Saranac Lake can now be reached from New York *via* N. Y. Central Railroad, almost without change of cars, within seventeen hours, or the trip may be made by Troy steamers which leave New York at 6 P.M. and reach Troy early in the morning, enabling one to be at the Sanitarium about 5 P.M.

The drainage is simple and efficient. The earth closet system is wholly in use and the material is removed to a distance at frequent and regular intervals. All the water is derived from a spring half a mile distant and is brought through iron pipes to the Sanitarium, reaching the second floor of the main building by gravitation only. All the meals are taken together in the airy drawing-room in the main building; a large supply of pure milk is derived from the cows belonging to the institution, and patients are allowed to drink it *ad libitum* whenever they desire to do so, whether at meals or between them.

Three meals are served daily and the usual bill of fare is about as follows: Breakfast, at 7.30 A.M., consisting of oatmeal or hominy and milk, beefsteak, chops or bacon, potatoes, bread and butter, coffee or milk. Dinner, at 1 P.M., soup, fish or fowl, or roast meat, two vegetables, pudding or fruit in season, milk *ad libitum*. Supper, 6.30 P.M., broiled meat or fish, or hashed meat, eggs, bread and butter, porridge, milk, fruit when obtainable. Alcoholic stimulants are very little used, and, contrary to the very pronounced view of all German observers, not at all in febrile cases. When the circulation is not readily excited and where no marked flushing follows their exhibition, they are moderately prescribed, usually in the form of whiskey or beer at meals. Patients are never allowed to use stimulants at their own discretion.

The climate of Saranac Lake does not differ materially from that of other parts of the Adirondack wilderness, except that the temperature during the cold season is remarkably low and steady, almost all changes from December to April being below the freezing-point. Much snow falls, and windless, cold, snowy days are a marked feature of the climate. January of this year was considered especially warm, the highest temperature recorded was 39° above and the lowest was 12 degrees below zero. The rainfall is a little above the average for New York State, amounting to about 55 inches.

The prevailing winds are westerly and southerly, and very windy days are the exception. The lower the mercury falls the less wind there is usually and the dryer the air becomes, so that exceedingly low temperature, such as 20 degrees below zero, is well borne by the patients. There is a dry period during the summer when little rain falls and the days become hot, while almost without an exception the nights are decidedly cool, and even during the hottest season there are but few nights when a blanket is not needed.

With the closest attention to hygienic matters, the main reliance in combating the disease is placed on the climatic influences and the life in the open air, this part of the treatment being carried out most thoroughly. Patients are encouraged to live out of doors and are gradually accustomed to inclemency of weather until they go out without regard to bad weather. Winter and summer they often sit—in winter thoroughly wrapped up—from six to eight hours in the open air. As the fever diminishes they are allowed to exercise, but not until then, and always moderately.

The drug treatment is considered as secondary, but is used to meet indications. Dr. Trudeau writes:

"Antifebrin is more used than any other drug, and is considered a valuable help in the restoration of the patient by increasing the capacity for taking food and diminishing the waste by its marked influence on the fever. It is often prescribed for months in 5-grain doses, usually taken at 11 A.M. and 5 P.M. Distinct improvement, more or less permanent, has seemed to follow the use of this drug in about forty per cent. of the cases treated. Next to antifebrin, creasote is perhaps more in use here than any other medicine; unlike antifebrin, it does not agree with almost all consumptives, and its use is restricted by the tolerance of the patient's stomach; when, however, it can be taken in large doses, four or five drops three times daily, a great improvement, not only in the subjective, but in the physical signs as well, has seemed to follow its exhibition in about fifteen per cent. of cases. If it disagrees with the stomach it is never given, even in small doses. Arsenic, cod-liver oil, and digitalis are also prescribed when indicated. The pneumatic cabinet is in daily use at the Sanitarium. Its use is resorted to mostly as a means of expanding the lungs and favorably influencing circulation and digestion in febrile cases in which malnutrition and debility are prominent features, and not as an appliance for the antiseptic treatment of pulmonary consumption."

The actual results obtained at the Adirondack Cottage Sanitarium are of very gratifying character, and compare favorably with those reported by others. A decided and important effect of treatment and climate is observed in the weight of most of the patients; the average gain for six months' stay at the institution is from nine to thirteen pounds. Perhaps the most remarkable effect has been observed in regard to one of the most frequent and dangerous complications of pulmonary consumption —hæmoptysis. Among eighty-three patients treated at the Sanitarium during the last year not a single hemorrhage occurred, and only four cases have been recorded since the institution began to receive patients four years ago.

Up to the end of 1888, 146 consumptive patients have been treated, and the results have been about as follows: Deaths 4, or not quite 3 per cent.; failed steadily 25, about 17 per cent.; stationary or slightly benefited 38, about 26 per cent.; disease arrested 63, or 43 per cent.; and cured 16, or 11 per cent.

Dr. Trudeau writes about these statistics:

"These figures are not, perhaps, thoroughly accurate, but they express on the whole the results, the classification adopted being necessarily a somewhat arbitrary one. Under the heading of cured cases come those in whom both the rational and physical signs of pulmonary phthisis have entirely disappeared; under that of arrested, those cases are put in whom the rational signs of phthisis have been steadily absent for several months with a return to normal strength, the physical signs, though abnormal, being interpreted by the observer as indicative of arrest in activity of morbid processes. This classification is made necessary by the fact that when most patients reach this stage the necessity of earning a livelihood compels them to return to their former occupations. No doubt a fair proportion of these would have ultimately come under the head of 'cured' had they been able to persist in the treatment."

The results of the last year are especially gratifying; of eighty-three patients, two, or 2½ per cent., have died; ten, or 12 per cent., continued to lose ground

and returned to their homes; eight, or 10 per cent., have improved; sixteen, or 20 per cent., have been so restored as to be able to resume again their various occupations, and twelve, or 14½ per cent., have been cured. The success in curing over 14 per cent. of consumptives is remarkable, and speaks highly for sanitarium treatment in general and more especially for that adopted at the Adirondack Cottage Sanitarium. Not to depend upon the patient's memory regarding important instructions, the following short, plain, and decided rules are placed in the hands of every inmate:

Out-of-door Life.—Patients gradually accustom themselves to leading an out-door life, that is, to remaining eight to ten hours in the open air each day. This should be done gradually, and at first the clothing should be heavy and the exposures to cold or inclement weather moderate in duration. Little by little the open-air sittings and walks are to be increased until the entire day is spent out of doors in all kinds of weather. In stormy weather the sheltered side of the verandas should be used for walking or sitting. When feverish, patients are urged to go out and remain sitting on the verandas well wrapped in suitable clothing.

Exercise.—*Violent* exercise is injurious. When feverish, patients will do well to make as little exertion as possible. *Fatigue*, when induced in persons still having active disease, is sure to be followed by loss of appetite, fever, exhaustion, and even sweating. Severe exercise in hot weather is injurious and may be dangerous. Patients will be informed by the physician how much exercise their case requires.

Food.—If unable to eat at the regular meal hours, patients will do well to drink milk every four hours.

Expectoration.—Patients are required ALWAYS to use the large spittoons in the public rooms and on the verandas, and the pasteboard ones in cottages; the latter should be burned every day in the stoves or fire-places. *Expectorating in handkerchiefs or on the floors, or even on the grounds in the immediate vicinity of the buildings, is strictly prohibited.*

It has been found that while moist sputum is harmless, when it becomes dried it will rise as dust, and may be inhaled. The above directions are given to guard against this result. Patients, for their own welfare and in order to assist in their rapid recovery, *will strictly observe these rules*, and will be liable to dismissal for wilful disobedience in this matter, which involves not only their own welfare but that of others.

Stimulants.—Stimulants are not allowed except under medical advice. No smoking is allowed at any time in the public rooms or on the piazzas. Patients are requested not to smoke at all unless permission is given by the physician.

The actual results obtained at the Saranac Lake Sanitarium place it in the front rank of institutions of similar character, but it stands before the world as unique, worthy of the highest praise, regarding its monetary affairs. Without endowment of any kind, depending simply upon the voluntary contributions of those interested in its work, strengthened and supported by the untiring labor of love of Dr. E. L. Trudeau and his associate, Dr. C. T. Wicker, of Saranac Lake, the Sanitarium is a charitable institution of the highest and noblest type. The patients are by no means paupers, but the price for board and medical attendance is fixed at such a low figure, five dollars per week, that people of moderate means are thereby given a chance to enjoy the great benefits of this remarkable institution. The promoters and supporters of the Adirondack Cottage Sanitarium deserve the thanks not only of those who have directly been benefited by a stay there, but of everybody who can appreciate the excellent service done by it to suffering fellow-beings.

The board of trustees, consisting of Dr. Alfred L. Loomis, Dr. E. L. Trudeau, Mr. Charles M. Lea, and Mr. Daniel W. Riddle, have charge of the finances of the institution, and their different annual reports show that from 1884 to February, 1889, they have received

From voluntary contributions		$29,565 50
From patients, for board		18,515 28
Total		$48,080 78
Of this sum they have spent for land, buildings, and other permanent investments	$20,674 42	
For board of patients and other running expenses	25,033 24	
		45,707 66
And have a cash balance on hand of		$2,373,12

The failure of Dr. Gleitsmann in his efforts to establish a sanitarium in Asheville, N. C., did not prevent Dr. Carl von Ruck from making another trial in the same direction, and it is now a little less than one year since Dr. von Ruck, who had conducted until then a small private hospital for throat and lung diseases in Norwalk, Ohio, successfully, transferred his institution in an enlarged form to Asheville, N. C. The climate there has been the subject of frequent discussions and it is generally agreed that it is almost an ideal one for phthisical patients. Notwithstanding the fact that large numbers of consumptives sojourn thither in search of health, the death-rate from that disease is a remarkably low one: only one native died last year of pulmonary consumption, a negro who came originally from South Carolina, while ten phthisical patients (visitors) died during the same period.

The Ashville institution is known as the Winyah Sanitarium and receives consumptives only. It is located outside of the city proper at the upper end of the natural water-shed of the city, and the inmates escape one of the few objectionable features of Asheville—the dust arising from the unpaved streets during the hot months. The building was originally intended for a hotel; it is furnished with steam heat, hot and cold water in all rooms, ventilating shafts, bath-rooms; it has a wide and high veranda, two hundred and fifty feet long, with west, south, and eastern exposure, and with the newly cultivated park immediately surrounding is well adapted to its purposes. The walks leading up the mountain

are graded in such a way as to make the ascent easy, even for weak patients, the rise being one foot in twenty-five, with plenty of seats scattered all over the place. Pine forests are in the near neighborhood and are daily visited by patients; oak covers some of the surrounding mountains; the soil is clay and sand, free from all marshes and standing waters.

Dr. Dettweiler's system of *resting* in the open air for as many hours as possible, in all kinds of weather, is carried out thoroughly by Dr. von Ruck; easy reclining chairs are provided, together with blankets for the cool season, and many patients are kept lying on the veranda the largest part of the day, until they show sufficient signs of improvement to warrant actual exercise in the open air. The same care which is exercised in the Adirondack Sanitarium regarding the expectorations of phthisical patients is used in Dr. von Ruck's institution, and it is said that the patients are so thoroughly informed of the danger to which they expose themselves and others by carelessly expectorating upon the floor or the sand covering the paths that there is a complete coöperation on the part of every individual. Of course, spittoons are provided in large numbers, but the patients are further supplied with Chinese paper handkerchiefs to be used instead of ordinary ones, and to be burned after being used once or twice. The spittoons are filled with antiseptic solutions and they are emptied and *thoroughly cleaned* at frequent and regular intervals. Patients are reminded never to swallow sputa.

The general nutrition of the patient is carefully attended to, milk is furnished *ad libitum* and can be had at any time; if koumyss is preferred, the latter is given in place of milk. The diet is the same as any first-class hotel would furnish, except that instead of pies good puddings are given and fried dishes are, as a rule, avoided. Especial attention is given to the condition of the digestive apparatus and gastro-intestinal derangements are considered the obstacles which *must* be removed before any progress can be made in the patient's condition. Dr. von Ruck agrees with the writer as to the vital importance of the strictest supervision of each and every patient, and no general plan of treating patients is adhered to; each case receives careful attention and the treatment as indicated by existing conditions. In general it may be said that Dr. von Ruck takes a position midway between Dr. Trudeau and Dr. Dettweiler regarding the use of stimulants; malt liquors are not at all used in the Sanitarium, but whiskey or brandy of known quality is prescribed in febrile cases. Light wines are allowed at meals, but the habitual use of stimulants is not encouraged. The daily administration of from ten to fifteen gallons of oxygen is resorted to in many instances and has proven to be of value in aiding digestion and developing some appetite in cases where all other means had failed. The pneumatic cabinet is used and considered of special value in phthisical cases where the disease is arrested, or nearly so, where the power of the respiratory muscles is to be augmented to increase expansion and capacity. It is claimed that good results have been obtained by antiseptic inhalations. The use of creasote has been abandoned and Dr. von Ruck states that after many careful and painstaking trials he has never been able to satisfy himself of any favorable influence upon the disease.

From October, 1888, to the end of May, 1889, fifty-one patients have been treated in the Sanitarium, and the results obtained are such as to satisfy the expectations of the most enthusiastic advocate of sanitarium treatment as the best means of curing consumptives.

During the month of December, 1888, Dr. H. M. Wilson, Jr., of Baltimore, undertook to establish a mountain sanitarium for phthisical patients in Tannersville, Catskill, but his efforts were not crowned with success and after a few months of existence the establishment was closed again.

In Colorado two sanitaria are in progress of erection, one at lake Palmer, to be built and conducted by a stock company of which Dr. Charles Dennison, of Denver, is the vice-president, and the other one in Colorado Springs, under the management of Dr. S. E. Solly, of that city.

An enterprise somewhat different from other existing sanitaria has been suggested and strongly advocated by Dr. J. H. Sloan, of Santa Fé, New Mexico. "A course of treatment by which the cure of phthisis pulmonalis is made not a probability but a certainty, in a majority of cases—in fact, in all cases where the disease is not too far advanced."[1] Dr. Sloan, having observed the great benefit which some of his consumptive patients have derived from camping in the mountains near Santa Fé, has determined to adopt out-door camp life under the supervision of a painstaking physician as "a positive cure for consumption." He claims that it is essential to spend at least eighteen months in the neighborhood of New Mexico, and he proposes to have his patients spend fourteen of them in tent life in the mountains in hunting, fishing, etc. The other four months, which are the intervening months of winter and early spring, are to be spent at the St. Vincent Sanitarium, in Santa Fé, when the patient will be surrounded by every comfort. Dr. Sloan has addressed a number of prominent physicians in the East and has laid his plans before them. The principal objection to this proposition is the expense entailed.

[1] Letter by Dr. Sloan of November 10, 1888.

SIMPLE TESTS OF THE OCULAR MUSCLES.[1]

BY B. ALEX. RANDALL, A.M., M.D.,
OPHTHALMIC AND AURAL SURGEON TO THE EPISCOPAL AND CHILDREN'S HOSPITALS, PHILADELPHIA.

SINCE the time when Donders and other pioneers first gave us a full picture of the matters of refraction, accommodation, and convergence, the questions as to muscular insufficiencies have occupied a considerable share of attention. Seizing these subjects with his usual vigor, v. Graefe handled them in a manner which has made them in great measure his own; and later discussion has shown that in many respects we can hardly do better than to return to him for solid teaching on this very important matter. Partial tenotomy, and other forms of "graduated tenotomy," rediscovered in this later day, were thoroughly tested by him; and the rules of procedure which he left us were the results of thorough winnowing of the useless from the valuable.

He gave us three practical tests, intended more especially for the study of insufficiencies of the interni, but two of them well calculated to serve in other cases. The first of these was as to the ability of the patient to fix with both eyes an object such as the finger-tip, as it was approached in the middle line to within a few inches of the eyes—a test that is often of value in determining which of the interni is the weaker—but a confessedly rough test, which, even with Landolt's "ophthalmodynamometer," rarely fails to show 16–20 metre angles of converging power in even very weak muscles.

The second test consists in causing the patient to fix upon an object held in the middle line a little below the horizontal at a convenient near point and watching for any wandering of one eye, in front of which a card is held. Modify his procedure by substituting a *fine* fixation object, such as a pen-point, for the "moderate-sized" penholder which he suggested, and we have an admirable test—ready, simple, and accurate. The *rationale* of this and of the third test, more generally called by v. Graefe's name, is clearly set forth in his paper; but his tests as there given are rather crude for the certain attainment of the end in view. We are to make trial of the *balance* which subsists between accommodation and convergence—"ein Gleichgewichtsversuch"—and the prime essential to any constant result is that the fixation-object shall be such as to hold the accommodation fixed and unvarying. It is a delicately formed forefinger which needs any accurate accommodation to see it with fair clearness; yet how often we see the test applied in this way! It is small wonder that we hear little as to the value of results thus gained. But try the test in the other form—use a fine pen-point as the fixation-object, insist that the patient fix it so as to see the tip sharply, and make quick movements of the covering card from one eye to the other, and you will obtain results of great practical value and reliability. I do not remember that I have ever discovered by any other test a muscular insufficiency which this test had failed to reveal. Further, it is a test which is *quantitative* as well as qualitative; and in hundreds of cases the *degree* of insufficiency thus estimated and recorded has proven at most only 1° away from the result as measured by prisms. Roughly speaking, each millimetre of movement of the deviating eye corresponds to 2° of insufficiency as measured by the prisms; but so far as the interni are concerned, each jerk with which the fixation is accomplished is to be multiplied into the foregoing result. Thus, if the covered eye move in some 3 mms. to fix, but do so with three distinct impulses, our estimate of the degree of deviation would be, not 6°, but 18°. Of course, no such rough rule-of-thumb will enable every one at the first trial accurately to estimate degrees of deviation; but a very moderate amount of practice in the comparative use of this and other tests will prove to any one that it is as accurate as it is easy.

No one who has had any experience in testing muscular insufficiencies will need to be told that he must repeat his tests several times and average his results—the first few trials may show a relation of accommodation and convergence that is wholly fictitious and unnatural. Neither this nor any other test will give at all times equal or infallible results; but I ask for the method—always easy of application, without any spirit-levels or other paraphernalia—a reasonable and conscientious trial at your hands; and do not believe that you will often fail to discover and approximately measure even minute deviations, whether vertical or lateral. To the possible objection that long practice has made me especially expert in correctly estimating, I may reply that I was as accurate as now, when, after a year's practice, I demonstrated the method in v. Arlt's clinic in 1883. On the other hand, some one may object that this is all "as old as the hills," and utilized by every one. It ought to be; but I distinctly doubt if it is. I have never found any one who had habitually employed it.

Let us pass now to the third test of v. Graefe—that with vertical diplopia and prisms. It is, perhaps, in fashion to scoff at this test—never, surely, among those who know how to use it. It furnishes us with just what we want to know—the *habitual* relation between accommodation and convergence. Of course, this relation is not a fixed one; within the limits of the region of relative accommodation and convergence it may by effort be greatly altered; but the habit for each individual is fairly fixed, as we

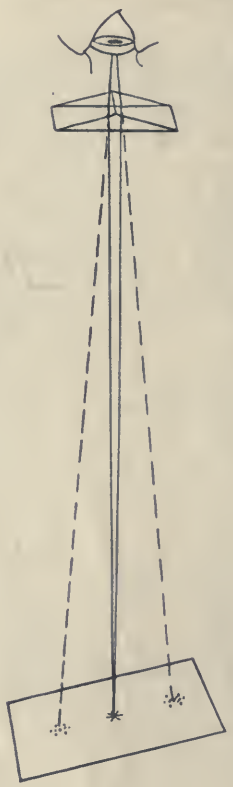
[1] Read before the American Ophthalmological Society, July 17, 1889.

often realize to our cost, if we try to secure abruptly too marked a change in ordering spherical glasses.

Let the underlying principles be clearly realized in practice, and the test will give results that can be relied upon. First, the fixation-object must be such as to hold the accommodation fixed—it must not, therefore, be a huge dot and line that could be seen many yards away, but a fine object, such as an asterisk, or a few letters of Jaeger No. 1, or still finer type. Second, the vertical diplopia must be absolute—no long vertical must be afforded which may be common to both images. In this matter too many have followed v. Graefe's original paper, where this was not fully realized, and too large a test object was there given—to be grossly exaggerated by some of his followers. I have seen titanic "dot and line" figures that occupied the greater part of an octavo page. No eye with a self-respecting accommodation could focus for such an object.

Given a suitable fixation-object and a vertically placed prism (one of 6° or 8° is quite strong enough) and there will be found few cases of lacking balance which will not reveal themselves to this test. In the measurement in degrees of the discovered deviation the revolving prisms of Crêtes will prove a great saver of time and trouble. Using this and a fixation-object which allows of no overlapping of the images, we will rarely be troubled by any question of "latent insufficiency." Perhaps I am confessing to great incapacity as an observer when I state that I have never seen a case of what Dr. E. G. Loring described as latent insufficiency, and of which Dr. H. D. Noyes spoke last year in the Washington meeting. I have met suggestions of it, which promptly yielded to more careful testing. There may be no question as to the possibility of its occurrence, so long as a patient has any region of relative accommodation and convergence; but, as a clinical fact, I have found it in no single case among hundreds carefully tested as to the muscular condition.

A device of extreme utility in using this vertical diplopia test for far or near was suggested some three years ago by E. E. Maddox (*Journal of Anatomy and Physiology*, xxi.), and it has been a surprise to me that so few seem to have noticed it in his abstract in the *Ophthalmic Review* for December, 1886. I have used it with the greatest satisfaction since seeing his paper. It consists of an obtuse-angled prism—or, as it may be otherwise stated—of a double prism base to base. It is held with the junction line of its two inclined surfaces bisecting the pupil, and gives, of course, two false images equidistant from the true position of the object.[1] In practical testing for distance the observer can cover one eye with the hand which holds the red glass, while he brings the prism into position with the other. A double point of light near the pole of the cornea tells when this is accomplished, and the patient can at once see two lights, and tell whether they stand in a vertical line. The red glass is then brought in front of the other eye, and a third light is seen tinged red. If midway between the two white lights, and in the same vertical line, every form of heterophoria is excluded at a single blow. On the other hand, the slightest vertical or lateral deviation is at once manifest; the red image may approach or blend with one of the white ones, or may wander to the side. If the strength of the prism is such as to give 1.5° of actual deviation in each direction—say 3° of angle in the older notation—no normal muscles are able to blend the real image with one of those vertically displaced; at 6 m. the apparent displacement is



about 15 cm. above and below the actual level. Only an eye with weakness of inferior or superior recti will see the red image at any notable distance from the proper level, and the deviation may be at once measured with the prisms as usual. Of course, it is well to check the results by changing the double prism to the other eye. The test is as readily applied near by, the fixation-object being an asterisk, or something of the sort, instead of a point of light. The prism is small, and may be conveniently carried

[1] Is not this an easy way of obtaining the double images in ophthalmometers like that of Javal and Schiötz? I have not yet put into execution my intention of testing it.

in the pocketbook, as mine has been for years, always ready for tests at the bedside, as well as elsewhere.

One point, as to the results of my testing, I would like to put upon record here; it has been previously set forth, but not with sufficient clearness: insufficiency of convergence for the near is met in a very large proportion of the eyes tested. Among 81 medical students it was noted (in degrees varying from 2°–12°) in 42 cases, or 52 per cent. Among the last 200 patients on my private case-book (excluding strabismus and presbyopia), there were 154 cases of insufficiency of convergence, 61 of no deviation, 21 of excessive convergence, and 4 of vertical deviation. All of those with inward tendency of the axes were hypermetropes, as were also most of those with deficient convergence.

The tests of the power of the muscles to overcome prisms for distance have not been often of practical value in my hands. Abduction in nineteen cases out of twenty has been from 6°–8°, adduction almost anything which the patient persistence of the examiner choose to make it. I find that most intelligent patients can overcome from 16°–60° abducent prisms, and those who have by the balance-test an unmistakable lack of convergence are sometimes the best at adduction experiments. For myself, with 3°. of outward deviation for distance and 8° at 25 cm., the abduction is 7° and the adduction from 50°–70°; and this not strictly as the result of practice, although I have always been able to converge my eyes enormously at will, for when first tested by Dr. Risley, ten years ago, the results were almost identical. My refraction is low H., and my accommodation normal.

The point on which I wish to lay stress is, that insufficiency of convergence for the near is the rule among hypermetropes. The reason seems not far to seek. The hypermetrope can avoid excessive convergence only by utilizing and developing the negative part of his range of relative convergence; and, like many of nature's compensations, the correction is overdone. Excessive convergence gives place to deficient convergence. Of course, I am speaking of uncorrected hypermetropia; the convex correcting glasses will give relative divergence in all but the actual squint cases, but these are the cases where the demand for excessive accommodation is still present.

As for the other side of the scale—the inward tendency of the visual axes—I have met hardly a case which could be considered one of insufficiency of the externi. A few cases of actual paresis and a number of the concomitant converging strabismus of hypermetropes, are the only apparent instances of the condition which have presented themselves.

HOSPITAL NOTES.

JEFFERSON COLLEGE HOSPITAL.

Clinic of J. M. Da Costa, M.D.

PHLEBITIS FOLLOWING TYPHOID FEVER—THREE CASES.

(Reported by E. P. Hershey, M.D., Clinical Assistant.)

Case I.—*October 18.* P. H., æt. twenty, laborer. Had typhoid fever ten weeks ago, lasting five weeks. During the third week of the fever, the left thigh began to swell and became very painful. In two weeks the swelling reached the knee, leg, and ankle of the same side. The leg is still swollen, though the swelling in the thigh has disappeared. When he first walked he experienced pain in the left thigh which has since disappeared. Heart very much overacting; a soft murmur may be heard at the base. The pulse is quick and compressible. There is no enlargement of the saphena. No pain in the calf of the leg on pressure. Urine amber, acid; sp. gr. 1020. No albumin; no sugar.

Case II.—C. S., æt. twenty-three, mechanic. Last July had typhoid fever; during the third week the left thigh began to swell; pain was felt along the saphenous vein. The thigh and leg are still swollen to a considerable extent—the whole leg from the crest of the ilium down to the foot. The internal saphenous vein is felt as a tense cord. Around the calf the tissues are brawny and hard, but there is no tenderness; it was tender, however, until three weeks ago. The veins can be felt, though they are not perceptible to the eye. Heart fairly well acting; there is a distinct second sound. There is no murmur at either base. The tongue is slightly coated. The appetite and digestion are good. There is no pain in the leg unless he walks a good distance, and then it begins to swell up more. Urine amber; acid, sp. gr. 1020. No albumin; no sugar.

Case III.—A. K., æt. twenty-nine, blacksmith. Had typhoid fever two months ago. During the third week of the fever, the left thigh began to swell, with but little pain. The swelling is marked when he walks any distance. On pressing deeply the saphenous vein may be felt swollen and tense, and is tender. The tissues about the calf are brawny. The veins are not visible. There is a large quantity of albumin in the urine, which has a sp. gr. of 1012, amber in color and acid in reaction.

Remarks.—These cases all represent the rule of the affection not coming on early in the fever. Even the third week is early; as a rule, they do not appear until convalescence. Here we have three cases where the appearance was during the third week, and as far as we can make out about the same day. All had pain at the time of occurrence. In the first case the pain has entirely disappeared. In the third there is pain on exertion, and in the second the same as the third, except it is more severe. None have pain without exertion.

In the first case only the ankle and leg are swollen; the swelling in the second and third, however, involves the whole leg. In the last two the saphenous vein is tense and swollen; not so, however, in the first case; it is fair to assume that the first case has passed through the same conditions.

Nearly all cases, under proper treatment, recover; the pathology, therefore, is difficult to get at. They are most likely caused by a phlebitis with a thrombus.

As a rule, one leg alone is affected, and, too, what is curious, it is generally the left. Here we have three cases presented at the same time in all of whom the affection is in the left leg. No accurate explanation of this selection has yet been given.

The swelling generally subsides slowly. Exertion generally redevelops the swelling, rather increases the swelling and redevelops pain. Some cases are extremely chronic, and a long time elapses before recovery takes place. One case now in mind, occurring in a business man, still shows swelling upon exertion after three years. In another, in a young man, the swelling develops now, after a number of years, when dancing.

The three cases presented are very instructive. There is no heart lesion. In the first case the overacting heart is due to the state of the blood. In none of these cases is there anything to lead us to suppose that a portion of the plug has been washed off and carried into the heart.

Albumin occurring in the urine of the third case is remarkable, yet explainable. The veins of the kidneys are engorged, caused by plugging of the saphenous vein, hence the albuminuria. This is unusual.

One of the earliest manifestations of this disease recurring in typhoid fever, and one important to bear in mind, is that pressure upon the calf of the leg develops pain; one side is more tender than the other.

The most important factor in the treatment is to keep the patients off their feet. Their business may prevent this, but when they are at home they should sit with the leg up, and thus aid the flow of blood by gravity. Another excellent method is by massage and shampooing. Very active massage is to be condemned; the plug may be broken off. With gentle massage, rub the leg thoroughly, night and morning, with the following liniment:

℞.—Chloral . . . . . ℥j.
Liniment sapon. . . . . ℥vij.

Another very useful plan of treatment is to use hot and cold douches followed by good friction, rubbing in an upward direction. Care should be used not to use any violence. Use bandage when walking or standing.

For the albuminuria in the third case:

Mistur. Basham. . . . . ℥j t. d.

For overacting heart in the second case:

℞.—Tinct. strophant. . . . . gtt. iij.
Tinct. cinchon. comp. . . . ℥j.
Sig. t. d.

There was marked improvement in all of these cases when seen two weeks after treatment.

MEDICAL PROGRESS.

Antacids in Dyspepsia and Gravel.—Sir William Roberts, in opening the Therapeutic Section of the British Medical Association, said that there were few simpler problems than those relating to the palliative treatment of acid dyspepsia and the chemical prophylaxis of uric acid gravel, but there were some practical points in carrying out the treatment which were neither simple nor well known. Antacid agents might be classified into those which were designed to take effect in the stomach, or gastric antacids; and those which were designed to take effect in the kidneys, or renal antacids. The gastric antacids in common use consisted of the alkaline and earthy carbonates and lime-water. Renal antacids combined, in addition to these, the acetates and citrates of potash and soda, which were changed in the *primæ viæ* into carbonates of these bases.

Gastric antacids were employed in two distinct classes of cases—namely, in acid dyspepsia, and in a variety of conditions characterized by great irritation of the stomach, often with vomiting, which we sought to allay by the administration of milk mixed with lime-water. For acid dyspepsia the lozenge was the best mode of administration of an antacid. The Pharmacopœia had two lozenges of this kind, the troch. sod. bicarb. and the troch. bismuthi. The latter was to be preferred. It owed its antacid properties to the chalk and magnesia which it contained, the bismuth being probably inert. Many lozenges sold in the shops contained pungent spices which were injurious. The Tichy lozenges were valuable, but rather costly. It was well to vary the antacid from time to time.

The question might now be put, Is there any harm in the practice of habitually using antacids for the relief of acid dyspepsia? He had naturally at one time regarded the practice with misgivings, but a more extended experience had led him to believe that it was harmless. He used the bismuth lozenge largely, but with the following precautions. They were not to be used at or near meal-times; they were not to be used regularly or systematically, but only when gastric pain was present and produced real discomfort; lastly, the use of the lozenge was to be discontinued if it failed to cut short the pain. Lime-water and milk was a favorite remedy, and often very successful. It sometimes failed, owing to the very low saturating power of lime-water. It was often desirable to substitute a solution of from five to ten grains of bicarbonate of soda per ounce for the lime-water.

The use of renal antacids rested on an equally rational basis. To prevent uric acid gravel forming we had only to keep the urine alkaline; but, simple as this was, there were some practical difficulties in the way, owing to the persistence of the tendency to the uric acid formation. It was very important to remember that this tendency did not last throughout the entire twenty-four hours, the necessary conditions being only present during the hours of sleep. It followed that if we safeguard the night, the day might generally be left to take care of itself. In the milder cases a full dose of the alkalizing agent at bedtime was sufficient. The citrate of potash was the best preparation. The dose for an adult should not be less than from forty to sixty grains, dissolved in three or four ounces of water. In severer cases a second dose should be taken about the middle period of the hours of sleep. In still more severe cases additional doses might be required, but usually only temporarily. The essential point in the prophylactic treatment of uric acid was to guard the urine from precipitating within the precincts of the kidney. An antacid which was too feeble to render the urine actually alkaline might postpone the time of precipitation.—*Lancet*, Aug. 17, 1889.

Fissures of the Tongue.—Great difficulty is generally experienced in the treatment of fissures of the tongue,

and the unpleasant malady seems, at times, to defy all therapeutic measures. Dr. Schwimmer, in the *Journal de Méd. de Paris* of August 4th, recommends the following, the use of which he has observed to be followed by the most marked success:

℞.—Papayotine or papaine . . 1 part.
Glycerine } . . . āā 10 parts.—M.
Water }

After drying the parts, apply the mixture several times daily.

Alcohol in Puerperal Fever.—At the meeting of the German Society of Obstetrics and Gynecology which was held on the 28th of June, Dr. A. Martin read a paper on the efficacy of alcohol in puerperal fever. Eighteen cases were cited, five of which died. Three cases were of pyæmia and fifteen of septicæmia. Besides the alcohol treatment, a strict local antiseptic treatment was also resorted to. The alcohol was given in large quantities in the shape of various wines and spirits together with a most nutritious diet. One of the cases which recovered was given, inside of six weeks, 17 bottles of cognac, 13 bottles of burgundy, 37 half-bottles of champagne, 4½ bottles of other heavy wines, and 6 bottles of porter. When slight diarrhœa was observed the wine was changed.—*Deutsche med. Wochenschrift*, July 25, 1889.

Tannin Injections in Typhoid.—Since the excellent results obtained by Cantani in the treatment of typhoid with enemas of tannin solution, the method has also been tested by several physicians in Germany; foremost among these are Dr. Mosler (*Münchener med. Wochenschrift*, July 23d) and Dr. Backhaus (*Deutsche med. Wochenschrift*, No. 29). The results obtained by these investigators are equally as good as those of Cantani. Mosler's method of using the remedy is as follows: He gives two injections daily of thirty grains of tannin in two quarts of water at body temperature. Later he increases the amount of tannin to nearly three drachms, the same amount of water being used. The enemas should be given slowly so that any sudden distention of the bowel be avoided. In all cases great relief was experienced after the use of the treatment, the diarrhœa disappearing entirely. The temperature is not affected by the use of the drug.

Salve for Anal Fissures.—The following salve, given in the *Revue gén. de Clin. et de Thérap.*, is designed to augment the healing in conjunction with the use of other curative methods. The fissures should be thoroughly stimulated with nitrate of silver and the salve applied several times daily. Its antiseptic and analgesic properties will be found most valuable.

℞.—Boracic acid . . . . 3 parts.
Hydrochlorate of cocaine . 1 part.
Lanolin . . . . . 30 parts.—M.

Radical Operation for Varicocele.—A simplification of the operation for the radical cure of varicocele has, of late, been extensively discussed among French specialists. Lucas Championnière and Reclus, in the *Ann. des Malad. des Organ. génito-urin.*, No. 4, 1889, and Paul Segond, in the *Centralblatt für Chirurgie* of August 10th, state that from extensive experience they maintain that the result obtained by mere resection of the scrotum is equally as good and certain as that obtained by operating directly upon the enlarged veins themselves. The former operation is devoid of danger, excepting that which is incurred by any surgical procedure, and also most simple. The latter, or old radical operation, is occasionally attended by complications far from pleasant.

Tillaux, in writing on this subject in the *Tribune Méd.*, No. 7, 1889, forwards the opinion that the spermatic artery is of but slight importance to the nourishment of the testicles, and has frequently sacrificed it when resecting the anterior plexus of veins, in the operation of varicocele of the spermatic veins. The place of the spermatic artery is readily taken by the deferential artery, which should remain undisturbed when the vas deferens is isolated.

Horteloup, although advocating resection of the skin of the scrotum, in doing this also removed the posterior bundle of veins; other operators have, however, proved that mere resection of the skin is equally as efficacious.

In the operation the testicles are pushed up as high as possible, and the scrotum below caught with a clamp, such as is used in securing the pedicle in ovarian operations or circumcision, then a row of silk sutures passed through the scrotum above the clamp, and temporarily held in place with artery forceps; then the part of the scrotum below these ligatures is resected away and the sutures knotted.

Sycosis Vulgaris.—Dr. O. Rosenthal, in the *Fortschritte der Med.*, August 1st, claims that the etiology of sycosis is still very uncertain. Efficient therapeusis he has nevertheless found. He substitutes for the former painful methods of treatment, the use of the following salve, which, it is claimed, acts almost like a specific:

℞.—Tannic acid . . . . . ℥jss.
Lactate of sulphur . . . ℥iij.
White oxide of zinc } . . āā ℥jvss.
Amyl }
Vaseline . . . . . ℥jss.—M.

The following modification will be found equally valuable:

℞.—Tannic acid . . . . . 15 grs.
Lactate of sulphur . . . 30 "
Vaseline . . . . . ℥v.—M.

Infantile Hysteria.—Drs. Hagenbach-Burckardt and Duboisin agree with the view of Liebermeister, viz., that hysteria is a functional pathological condition of the gray substance of the brain, and must, therefore, be regarded as a psychical disease, and not a neurosis. They also claim that psychical symptoms are never absent; indeed, in some cases, they are the only existing ones. The type of hysteria occurring in children is usually most simple, and, therefore, such cases are especially adapted for the study of the disease. Burckardt and Duboisin have carefully studied the history of twenty-four cases of infantile hysteria, in which predisposition played an important part. They found that in fifty-eight per cent. of the cases a hereditary neuropathic tendency could be traced, whilst fifty per cent. of the cases inherited tuberculosis. Only three cases, in which the disease was but slight, were free from both the above-named predis-

positions. All the patients, with two exceptions, were anæmic. Two had previously suffered from poliomyelitis anterior acuta. In eight cases only was the initiative cause traced to fear, shock, etc. But few instances of ultimate cure were observed. The majority remained anæmic, and continued to be troubled with either headache, palpitation, nervousness, bodily and mental weakness, weak-mindedness, or hysterical psychosis. The prognosis may, therefore, be regarded as unfavorable. This, however, is largely dependent upon early diagnosis and treatment. —*Centralbl. für klin. Med.*, August 3, 1889.

Treatment of Hemorrhoids.—Some time since Unna strongly recommended the use of chrysarobin in hemorrhoids. A report of twenty-two cases treated with this remedy now comes from a Russian physician, DR. KOSSOBUDSKI. True, he did not use the drug in such strong solutions as recommended by Unna (five to ten per cent.), yet the result of the treatment was most gratifying. After washing the parts with a two per cent. carbolic acid, or a one per cent. creolin solution, and drying them with absorbent cotton, he applied, three or four times daily, a salve of the following formula:

℞.—Chrysarobin . . . grs. xij.
Iodoform . . . . grs. v.
Extract of belladonna . . grs. jx.
Vaseline . . . . ʒjv.—M.

In cases of internal hemorrhoids he prescribed suppositories as follows:

℞.—Chrysarobin . . . . grs. 1¼.
Iodoform . . . . gr. ⅓.
Extract of belladonna . . gr. ⅙.
Cacao butter . . . grs. xxx.
Glycerine q. s. for suppository.

If bleeding was severe, tannin was added to the above. With such therapeusis the pain and bleeding disappeared in all cases within three or four days, and the hemorrhoids had completely shrunk away in three or four months.—*Centralbl. für Chirurg.*, August 17, 1889.

The Treatment of Placenta Prævia.—DR. BRAXTON HICKS recommends (*Lancet*, Aug. 17, 1889) the following method: 1. After the diagnosis of placenta prævia is made, proceed as early as possible to terminate pregnancy. 2. When once we have commenced to act, we are to remain by our patient. 3. If the os is freely expanded and the placenta marginal, rupture the membranes, and wait to see if the head is soon pushed by the pains into the os. 4. If there be any slowness or hesitation in this respect, employ forceps or version. 5. If the os is small and the placenta more or less over it, carefully detach the placenta from round the os, and if no further bleeding occurs we may wait an hour or two; but should the os not expand, and if dilating bags are at hand, the os may be dilated. If it appears that the forceps can be admitted easily, they may be used; but if not, version by the combined internal and external method should be employed, and the os plugged by the leg or breech of the fœtus; after this is done, the case may be left to nature, with gentle assistance, as in footling and breech cases. 6. If the os is small, and if we have neither forceps nor dilating bags, then combined version should be resorted to, leaving the rest to nature, gently assisted. 7. If during any of the above manœuvres sharp bleeding should come on, it is best to turn by the combined method in order to plug by breech. 8. When the fœtus is dead, or labor occurs before the end of the seventh month, version by the combined method, no force following, is the best plan. To these Dr. Braxton Hicks added, if we employ a routine method in most cases, it will be found that version by the combined method, no force following, gives a result as good as, if not better than, any. As to after-treatment, act on modern principles. Should oozing occur after expulsion of the placenta, swab the lower uterus by styptics, and irrigate the uterus daily with some antiseptic solution, and particularly, if irrigation cannot be done, insert iodoform pessaries in the vagina. This is especially useful if the outlet of the uterus is blocked by adherent clots.

Formulæ for Infantile Constipation.—We quote the following from the *Lyon Méd.* of August 4th: For constipation in newborn infants, DRS. WIDERHOFFER and MONTI prefer mannite to any other drug. Its action, whilst mild and non-irritating, is also efficient. The formula usually employed is:

℞.—Crystals of mannite . . . 5 parts.
Water . . . . . 50 " —M.

Dose, one teaspoonful, given every two hours.

Another favorite formula is that of DR. WIETHE, of Vienna, it reads as follows:

℞.—Powdered rhubarb root } āā grs. xlviij to lxxx.
Carbonate of magnesia }
Oleo-saccharure of fennel or anise, grs. xlviij.—M.

The dose is said to be "a pinch" of the powder three times daily.

Hemorrhage from the Umbilical Cord.—DR. AUVARD has recently described an instructive case of this accident, which occurred six hours after birth in a private case. The cord was carefully tied one inch and a half from the umbilicus; it was thick and contained much Whartonian jelly. Four hours later, Dr. Auvard visited the mother, who was thirty-five years old, and had borne two other children. Looking at the infant he noticed that it was rather pale, but sleeping comfortably. He was sent for an hour and a half later, as the nurse had found the child's binder soaked with blood, and its extremities were cold. The cord was immediately tied again, and the child kept warm. On Dr. Auvard's arrival he found that drops of blood kept issuing from the stump of the cord, notwithstanding the new ligature. He tied the three umbilical vessels separately; the hemorrhage then ceased, and the infant, a well-nourished female, recovered perfectly.—*British Medical Journal*, August 10, 1889.

Injections of Salt and Water after severe Hemorrhage.—The following case is reported in the *Centralblatt für Chirurgie* of August 3d, by DR. PREGALDINO:

The patient, a woman, aged thirty-eight, had lost an enormous quantity of blood after an abortion. When called in, Pregaldino found her unconscious and pulseless, heart tones almost inaudible, respirations merely superficial. He immediately lowered the head and raised the body, wrapped an elastic bandage around the

lower extremities, and tamponaded the vagina. Finding that the patient continued to sink, he injected seven fluidrachms of a five per mil. solution of salt and boiled water, under strict antiseptic precautions, under the skin of the abdomen. He injected three and a half fluidounces at the same point and three others, inside of twenty minutes. During the injections massage was applied to the abdomen. Consciousness soon returned, and the patient raised herself. After this an additional seventeen fluidounces of the solution were injected. The result was speedy recovery.

Oxygenized Water in the Treatment of Blennorrhagia.—We quote the following formula from the *Journal de Méd. de Paris* of July 28th:

℞.—Oxygenized water (10 per cent. solution) . . . . f℥j.
Distilled water . . . f℥j.
Bichloride of mercury . . gr. ¼.—M.

Three injections should be made daily; the treatment need only be continued for two or three days.

Lime as a Disinfectant.—A short time ago the results of a number of experiments regarding the germicidal properties of lime, were published by Kitasato, Liborius, and Pfuhl. These investigators tested principally the antibacillary properties exerted by lime in feces containing cholera and typhoid germs. These results were indeed most happy and proved the powerful germicidal properties of lime even in proportions of 4 to 1000.

Quite recently (*Arch. de Méd. et de Pharm. militaire*, August, 1889) the results obtained in Germany have been confirmed by DRS. RICHARD and CHANTEMESSE, of Paris, who also quote the experiences of other investigators which coincide with their own. For disinfecting purposes they used a 20 per cent. solution of lime, or "lait de chaux" as it is termed by them. Comparative tables given, show that in the feces of typhoid and dysentery the germicidal efficacy of lime is far greater than that of sublimate solution (1 to 1000), hydrochloric acid (5 to 1000), or chloride of lime (5 per cent.).

Creolin in Dysentery.—Our readers will remember our having cited in THE MEDICAL NEWS of July 20th, the happy results obtained by a Russian physician with creolin injections in dysentery. The *Lancet* of August 3d now reports that another Russian physician, DR. KOLOKOLOFF, has also employed one per cent. creolin injections in this disease in a number of cases with complete success. In the majority of cases two or three injections effected a cure. No unpleasant symptoms seem to follow their use.

Homerania in Tuberculosis.—Homerania is a plant belonging to the polygonaceæ, and has been successfully employed by DR. LASKOFT in the treatment of tuberculosis. The plant is indigenous to Russia, and an irritant oil is extracted from it. Laskoft prescribes an infusion or decoction of the plant in many respiratory affections, particularly bronchitis and tuberculosis. He states, in the *Journal de Méd. de Paris* of August 4th, that he has treated 112 cases of tuberculosis with this remedy, and in 90 cases complete cure was effected. In the early stages of the disease the improvement of the system in general was most marked, together with a steady regression of the pulmonary lesions, which could be determined by auscultation and percussion. In the advanced stages of the disease cure was not effected by the drug, although the general condition of the patient was greatly ameliorated by its use. The night-sweats ceased, and the cough and expectoration greatly diminished.

Laskoft gives the following formula for the drug:

℞.—Infusion or decoction of homerania f℥j.
Distilled water . . . . Oij.—M.

Sig.—To be taken in twenty-four hours.

Conjugal Diabetes.—At the last meeting of the "Hospital Medical Society" of Paris, reported in the *Revue gén. de Clin. et de Thérap.* of August 1st, DR. DEBOVE reported six instances where diabetes had occurred simultaneously in man and wife. As this coincidence has also been frequently observed by other practitioners, he considered the subject worthy of careful investigation. Debove does not accept the theory that the simultaneous existence of the disease may be due to the defective alimentation of both patients, but, rather, that contagion is seemingly possible, if not probable.

Several members of the Society reported simultaneous or consecutive cases of the disease in their own practices.

Antiseptic Treatment of Variola.—A novel and apparently efficacious method of treating variola has been advanced by DR. LEWENTANER in the *Therap. Monatsheft.* It consists of application to the face of a three per cent. carbolic or salicylic paste, made with starch and oil of sweet almonds. The application is kept on the face by means of a mask. The body and limbs are frequently anointed with the following salve:

℞.—Glycerine (neutral) . . . 70 parts.
Starch . . . . . 30 "
Salicylic acid . . . . 3 "—M.

Internally, Lewentaner gives every quarter or half hour a few drops of the following:

℞.—Oil of sweet almonds . . f℥ss.
Syrup of orange flowers . . f℥jss.
Laurel water . . . . f℥iij.
Hydrochlorate of quinine . . grs. v.
Dissolve in hydrochloric acid q. s. to make emulsion.

In six cases where the treatment was used all recovered without any complications and without scars. The duration of the disease is greatly shortened by the treatment, the average, after the appearance of the eruption, being twelve to thirteen days. There was almost an entire absence of fever during the course of the malady. The contagiousness of the disease seems to be completely suspended by means of the treatment. The patients in question were surrounded by other children, not vaccinated, yet none took the disease.

Nervous Cough.—At the last Meeting of Physicians in Cologne, DR. PAUL KOCH delivered an address on the subject of nervous cough; at the close of which he stated the following conclusions which his researches had caused him to arrive at:

1. The existence of a purely nervous cough cannot be denied, although the term is often misapplied.

2. The diagnosis can only be determined after the perfect soundness of the organs of the chest and abdomen has been confirmed.

3. The pathognomic symptom is a cough of unvarying sameness in the individual affected.

4. The multiplicity of curative measures for this affection is a proof of their inefficiency. The disease usually cures itself. A sea voyage or change of air and scene acts most beneficially.—*Wiener klin. Wochenschr.*, July 25, 1889.

Injection for Leucorrhœa.—We quote the following from the *Union Médical*, August 13th:

℞.—Chlorate of potash . . . 12 parts.
Laudanum . . . . 10 "
Tar water . . . . 300 "—M.

Two or three tablespoonfuls of the mixture, added to a quart of water, should be used as an injection every morning and evening. The duration of each injection should be about five or six minutes. Under this treatment the fetid discharge is said to occur frequently.

Cure for Oxyuris Vermicularis.—According to the *Canada Medical Record* for August, oxyuris vermicularis will promptly disappear after injections, per rectum, of cod-liver oil, pure or made into an emulsion with the yolk of an egg. It is non-irritating, and is said never to have failed in effecting a cure.

Strychnine in Alcoholism.—JAROCHEWSKY, in the *Journal de Méd. de Paris* of July 21st, reports two cases of chronic alcoholism and one of dipsomania which he successfully treated with strychnine. In all cases the region of the stomach and liver was painful to the touch. One case was clearly hereditary. The treatment consisted either in hypodermic injections of $\frac{1}{32}$ gr. of strychnine, repeated in ten days; or daily doses, by the mouth, of $\frac{1}{40}$ gr. of strychnine for two to five months. In every instance the recovery was complete.

Excretion of Phosphates in Rickets.—DR. V. TEDESCHI, of Trieste, publishes in the *Rivista Veneta di Scien. Med.* the following results of his examination of the urine, feces, and sweat of rachitic patients compared with those of healthy people. In the urine of healthy children the phosphates varied in quantity even though the diet remained unchanged, the maximum and minimum amount of phosphates generally following one another directly. The urine of rickety children showed the same variation. The variation was probably the cause of different results in different examinations. As a rule, however, the phosphates in the urine of rachitic children were greater than in healthy children. The phosphates in the feces were increased when the child was constipated, and diminished in diarrhœa. The feces in the diarrhœa of rickety children contained less phosphates than those in the diarrhœa of non-rickety children, except the latter happened to be suffering from intestinal catarrh. Whenever the phosphates were increased in the feces of rachitic children the same increase took place in the urine, and the same may be said of the decrease. The best remedy for the treatment of diarrhœa in rachitis seemed to be phosphate of lime. The profuse secretion of the sweat glands in rachitis contained more saline matter than is usually to be found in the secretion of healthy children.—*The Lancet*, August 17, 1889.

Hydrate of Amylen in Epilepsy.—WILDERMUTH has used one-half to one drachm doses of hydrate of amylen with considerable success in epilepsy. Also in cases where bromides had previously been used in excess. It proved to be valuable in treating several cases of nocturnal enuresis. One and one-half to two drachms of the drug may be given daily. Wildermuth usually prescribes it in a watery solution. During the epileptic attacks hypodermic injections of the drug have been given with marked success. No unpleasant symptoms were observed to follow large doses. Its long-continued use produced continued sleepiness. The anti-epileptic properties of the drug only lasted for six or eight weeks in most cases.—*Deutsche med. Wochenschr.*, August 15, 1889.

The Relative Growth of Organs of the Body.—An interesting investigation has recently been conducted by DR. OPPENHEIMER, and is reported in the *Centralbl. für klin. Med.*, August 17. Oppenheimer bases the results obtained upon 943 autopsies, at which careful measurements were taken. Briefly summarized they are as follows:

1. The weight of the body reaches its highest point sooner in the female than in the male. The bodily weight of the adult man is usually about twenty times that of the infant, whilst that of the adult female is eighteen times that of the infant.

2. The growth of the lungs greatly exceeds that of the body in general.

3. The heart grows nearly in proportion to the body.

4. Similarly the spleen and kidneys.

5. The liver and brain grow relatively slower than the general organism.

Treatment of Diphtheria.—CHANTEMESSE and WIDAL, in the *Prager med. Woch.* of July 31st, speak of the results obtained by them with various antiseptics upon the bacillus of diphtheria. After numerous experiments they settled upon the following formula, which seemed most efficacious and practical:

℞.—Carbolic acid . . . . ʒ 2¾.
Glycerine . . . . . ʒ 6¾.
Camphor . . . . . ʒ 5.—M.

Dissolve with heat; cool and decant. The decanted fluid will be a camphorated phenol-glycerol, which should be applied to the diphtheritic patches once or twice daily, the parts having been previously washed with carbolic solution.

Camphorated Naphthol in Tuberculous Ulcerations.—Camphorated naphthol, in a mixture of one part naphthol and two parts of camphor, forms an oily liquid, and may be easily applied to ulcerations of the skin and mucous membranes. DR. FERNET, in *L'Abeille Médicale* of August 19th, claims to have found it a most valuable application for tuberculous ulcerations, especially those of the mouth and throat. Fernet by no means asserts that in camphorated naphthol to have found a cure for tuberculous ulcerations, but holds that by its use the local symptoms will be greatly ameliorated.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, SEPTEMBER 7, 1889.

RESPONSIBILITY IN THE MANAGEMENT OF CONTAGIOUS OR INFECTIOUS DISEASES.

APART from the legal aspects of the question of compulsory notification of contagious or infectious diseases to the local health authority, the medical practitioner is bound by moral obligation to do all within his power to restrict or prevent the spread of diseases of this class which cause so much suffering and loss of life. The physician, from the close personal relations which he bears to the sick, and the dependence placed on his judgment and advice, possesses exceptional advantages for instituting and directing measures for the protection of the health of the family and of the community, and therefore holds a position of the greatest responsibility. The notification of the local health authority does not relieve him from this responsibility, but, by inviting coöperation, strengthens his hands in the performance of duty.

In the early stages of disease, when doubts arise as to the diagnosis, an invaluable opportunity for instituting protective measures is often lost by awaiting, inactive, the future development of the symptoms. Suspicions of the infectious nature of the disease demand the prompt use of measures of precaution. Epidemics have occurred through the dilatory action of the physician, who, while waiting for distinctive symptoms before employing the means of prophylaxis, has allowed the infection to escape beyond his control. In proof of this statement, a recent epidemic of smallpox arising though such neglect might be mentioned, which involved nearly four hundred cases, eighty of which proved fatal.

The prompt isolation of those suffering from dangerous communicable disease or with symptoms giving rise to suspicions of such disease, the careful attention to ventilation, to personal cleanliness, and to cleanliness of the appartment and everything pertaining thereto, and the employment of rational methods of disinfection during the continuance of the malady and after its termination, and when this termination is by death the proper care of the corpse and the protection of the public by advising against the assembly of persons at the funeral, are all measures of extreme importance which the medical attendant should deem it his duty to enforce. The disregard of his directions is sufficient reason for invoking the coöperation of the health authorities whom the law has clothed with absolute authority in all such cases.

No one is better acquainted than the physician with the value of the scientific use of disinfectants. There is no longer the uncertainty that formerly existed with regard to the methods of employment of these valuable agents. Elaborate and precise investigations conducted in the laboratory with the object of determining the relative potency of various substances in destroying the germs of disease, have yielded definite and valuable results, so that we now have at our command a number of agents of positive efficiency in destroying all known morbific poisons which emanate from the bodies of the sick.

The number of cases of disease of the class we are considering over which the health authorities assume special control is comparatively small; the greater number is left to the care of the medical attendant. The Board of Health may prescribe rules and regulations to be observed in the management of all such cases, and impose penalties for their infraction. It is not possible, however, by official espionage to obtain knowledge of the manner in which these regulations are observed; and hence this information must emanate from the medical attendant, who for the time being is constituted a quasi health officer, upon whom there is imposed a dual obligation, that to the patient and family and that to the community generally. The neglect of this responsible duty from personal considerations is deserving of the severest condemnation. The suppression of the true knowledge of the disease, the allowing of intercourse with the sick, or the attendance at school

of children from an infected house are instances of breach of duty, the consequences of which can readily be foreseen.

The occurrence of disease which from its nature is liable to spread and inflict great injury upon the community, calls for special and immediate action upon the part of the medical attendant. To a certain extent he should act as the guardian of the public health. It is his duty to inform the health authorities promptly of the existence of such disease, and to acquaint himself with the law and regulations pertaining to its management, and to coöperate willingly in carrying out all measures prescribed for restricting the spread of contagion. His peculiar relations to the family enable him to institute and supervise all needful precautions without the annoyance incident to official interference. If these advantages are fully appreciated and turned to practical account, there need be no occasion for intrusion of the authorities. The physician, however, cannot exercise his option in the matter of reporting these cases; the law requires it and must be obeyed. It is reserved for the health officer to judge whether the measures employed meet the necessities of the case. Besides insuring the proper management of individual cases, there are other objects of notification, which are the prompt adoption of general measures of prophylaxis, the investigation of the origin, causes, and course of outbreaks of virulent disease, the collection of statistical data, all of which are greatly facilitated by prompt and accurate report to the proper authorities.

COLORECTOSTOMY.

THAT colorectostomy, or the formation of an anastomosis between the rectum and colon, will gain for itself such popularity over inguinal colotomy as the latter operation has over lumbar colotomy, we do not anticipate. Were inguinal colotomy impossible, we would stop to consider whether in all cases the more serious (if practicable) procedure would not be justifiable, that our patients might be saved from the subsequent filth and discomfort of the lumbar operation, now happily almost a thing of the past. But not so; for, while anterior colotomy has been reduced to an extreme minimum of primary risk and secondary discomfort, and is applicable to all cases, on the other hand, colorectostomy must of necessity be limited to a small class, and be much more difficult and dangerous.

The operation has not, as yet, been performed upon the living body, but, from studies upon the cadaver, is described by its projector, DR. EMERICH ULLMANN, in the *Wiener med. Presse*, No. 24, 1889. Its possible field is limited to highly situated and closely circumscribed disease of the rectum; the stricture or tumor mass must be at least several inches above the anus. These necessary conditions being present, Ullmann proposes to operate as follows:

The rectum having been emptied and cleansed, an incision is begun midway between the left tuber ischii and anus, and carried upward to the same side of the sacro-coccygeal junction, and downward through the levator ani muscle, pelvic fascia, and peritoneum to the full length of incision. Should there not be sufficient room at this or any subsequent stage, the coccyx can be partly disarticulated and turned aside, or at once excised. The rectum and its surroundings are now carefully examined. If excision of the organ is not found to be possible, and the surroundings are not so infiltrated as to prohibit drawing down the colon, operation is continued; otherwise it should be abandoned in favor of excision or colotomy. Conditions being favorable, the thumb and index-finger seek the sigmoid flexure, through the meso-colon of which a strip of gauze is inserted. Traction upon the gauze, with the assistance of the fingers, brings the coil of bowel into the wound. An incision parallel to the bowel axis is then made upon the left side of the rectum midway between the sphincter and stricture. A similar opening is also made upon the right posterior portion of the prolapsed bowel, and the two openings are united in the usual way. The wound of soft parts should be left open, packed, and kept absolutely aseptic.

For one variety of conditions Ullmann's operation may prove of value. That is, in cases of high non-malignant stricture, where the patient otherwise might be compelled to go through a long life with an artificial anus. Here, if our German brethren prove the proposed resource to be surgical, even a considerable amount of risk would be justifiable to gain the result which Ullmann believes quite possible.

THE Director of the Laboratory of the Cronica Medico-Quirurgica of Havana entertained Dr. George M. Sternberg, U. S. Commissioner to investigate yellow fever, at a complimentary banquet on August 24th, prior to his departure from Havana, where he has been for several months studying the bacteriology

of yellow fever. Dr. Sternberg will immediately return to this country and complete his research by an extended comparative investigation, by the same methods, of cadavers from other diseases.

THE Examining Board of the United States Navy, consisting of Medical Director Alfred C. Gorgas, Inspector John H. Clark, and Surgeon Thomas H. Streets, last week held a special session at the Naval Hospital at Brooklyn, for the purpose of examining candidates for eight vacancies in the medical corps.

THE American Public Health Association will hold its seventeenth annual meeting at Brooklyn, N. Y., October 22, 23, 24, and 25, 1889, under the presidency of Dr. Hosmer A. Johnson, of Chicago.

The Executive Committee have selected the following topics for consideration:

I. The causes and prevention of infant mortality.

II. Railway Sanitation. (*a*) Heating and ventilation of railway passenger coaches. (*b*) Water-supply, water-closets, etc. (*c*) Carrying passengers infected with communicable diseases.

III. Steamship Sanitation.

IV. Methods of Scientific Cooking.

V. Yellow Fever. (*a*) The unprotected avenues through which yellow fever is liable to be brought into the United States. (*b*) The sanitary requirements necessary to render a town or city proof against an epidemic of yellow fever. (*c*) The course to be taken by local health authorities upon the outbreak of yellow fever.

VI. The Prevention and Restriction of Tuberculosis in Man.

VII. Methods of Prevention of Diphtheria, with Results of such Methods.

VIII. How Far should Health Authorities be Permitted to Apply Known Preventive Measures for the Control of Diphtheria.

IX. Compulsory Vaccination.

X. Sanitation of Asylums, Prisons, Jails, and other Eleemosynary Institutions.

Papers upon miscellaneous sanitary subjects not included in the above list will be received by the Executive Committee subject to the requirements of the By-Laws.

WE regret to learn of the death of Dr. Thomas King Chambers, Honorary Physician to the Prince of Wales, Senior Consulting Physician to St. Mary's Hospital, and author of "Lectures, Chiefly Clinical," "Indigestions or Diseases of the Digestive Organs Functionally Treated," and "A Manual of Diet and Regimen in Health and Disease," works which were reprinted and widely read in this country. Dr. Chambers was a graduate of the University of Oxford, and was a physician of great culture and marked originality. He died on the 15th ultimo, at the age of seventy-one.

REVIEWS.

LECTURES ON PATHOLOGICAL ANATOMY. By SAMUEL WILKS, M.D., F.R.S., Consulting Physician to, and formerly Lecturer on Medicine and Pathology at, Guy's Hospital; and the late WALTER MOXON, M.D., F.R.C.P., Physician to, and for sometime Lecturer on Pathology at, Guy's Hospital. 8vo., pp. xx., 672. Third edition, thoroughly revised. By SAMUEL WILKS, M.D., LL.D., F.R.S. London and New York: Longmans, Green & Co., 1889.

THE publication of a new edition of a work which has so long enjoyed the high reputation of the Lectures of Wilks and Moxon is not to be wondered at. Owing to the death of Dr. Moxon, shortly before the exhaustion of the former edition, the work of revision has devolved upon his venerable colleague. In this way the general character and scope of the book have been preserved, notwithstanding the introduction of much new matter. To make room for this, without materially increasing the size of the volume, much that was thought superfluous has been omitted, and some of the chapters have been rewritten.

As in the previous editions the subject is treated from the standpoint of the autopsy table rather than from that of the laboratory. Gross appearance accordingly receives more detailed description than histological structure. Throughout the book, also, there is a noticeable deficiency in the discussions of the etiology of the various conditions. This is especially apparent in the notices of the infectious diseases. For example, on p. 430 we read: "It has been said of late that a specific bacillus may be found in typhoid, and the report from Cornil's laboratory is that it has been discovered also in the liver, lungs, and spleen. The difficulty in proving this has been to get a pure cultivation, and to separate the specific form from other bacilli." The etiology of cholera is dismissed with the following (p. 648): "The microbe found by Koch, and which he calls the 'comma-bacillus,' is said to be characteristic. It has been found also by Klein and Gibbes in the dejecta and in the intestine, but they decline to say that it is the cause of the disease."

Inaccuracies are also occasionally noticeable as, on p. 267, where the statement is made that inflammation of a nerve "has been called *peripheral* or *interstitial neuritis*, according as the sheath or the internal structure is affected;" and on p. 167, where we are told that "tubercle is not known to attack bloodvessels." The author himself contradicts the latter statement on p. 181, where he says: "Tubercle is almost unknown in the veins," thus tacitly admitting its occasional occurrence.

It is not with any desire to be hypercritical that these defects are alluded to, but in the hope that they may receive correction in a later edition. None can be more appreciative than we of the usefulness of the book as the embodiment of an experience acquired during years of careful study at the autopsy table.

SOCIETY PROCEEDINGS.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Stated Meeting, March 15, 1889.

THE PRESIDENT, CHARLES T. PARKES, M.D., IN THE CHAIR.

DR. W. W. JAGGARD read some notes on the

ETIOLOGY OF PUERPERAL ECLAMPSIA.

The term denotes epileptiform convulsions, characterized by recurrence of paroxysm after longer or shorter pauses, followed by unconsciousness, that occur during labor, pregnancy, and the puerperium. As thus defined, the expression puerperal eclampsia restricts us to no particular theory as to etiology.

Happily, the symptom, justly regarded as a disease, is of infrequent occurrence. In general terms, eclampsia is observed once in five hundred deliveries. Out of 316 cases collected by Carl Schroeder, convulsions occurred 190 times during labor, 62 times during pregnancy, and 64 times during the puerperium.

Among the modern theories of etiology, the first, as well in point of time as in present importance, is the doctrine that eclampsia is the expression of acute urinemia, conditioned either upon functional or organic disease of the kidneys, or upon obstruction to the flow of urine through the ureters. The evolution of this conception has been gradual, and it may be profitable to trace the stages of its development.

After the recognition of the association of albuminuria and disease of the kidneys with eclampsia by Lever (1842), Jevilliers and Regnault (1848), Frerichs (1851) advanced the hypothesis of uræmia, and suggested that the convulsions were due to the retention in the blood of urea and its decomposition into ammonium carbonate. This notion has become obsolete, since, aside from an isolated observation by Spiegelberg (1870), the presence of ammonium carbonate in the blood in sufficient quantity to cause convulsions has never been demonstrated, notwithstanding numerous examinations of the fluid by responsible chemists. The weak points in the hypothesis of ammonemia have been pointed out particularly by Rouxmelaire, Voit, and Bartels.

The notion of the mere retention of urea, without decomposition-changes, as the cause of the disease, has been shown to be without basis in fact. Winckel has demonstrated that no such accumulation of urea occurs in the most important organs of dead eclamptics—that is, in the liver and muscles—but that, on the contrary, these organs contain less than the normal quantity. E. Voit and M. Stumpf have observed that the elimination of nitrogen through the urine in convalescent eclamptics is about equal to the minimum excreted in the condition of absolute starvation.

Carl Braun, at the same time that Frerichs published his classical treatise (1851), declared puerperal eclampsia to be identical with the convulsions of Bright's disease. Braun's theory (1857) in his own words is: "The interruption of the secretion of urine in both kidneys, the acute retention of all excrementitious matters (normally excreted by the kidneys) in the blood and tissues, exercises a highly pernicious influence and explains the occurrence of eclampsia." In proof of this theorem, Braun has brought forward an amount of evidence that almost amounts to demonstration. Although certain observers affect a disbelief in this etiological doctrine, yet they all fully recognize it in prevention and treatment. Still, Braun's theory, just quoted, cannot be accepted as a universal proposition. It explains the very large majority of cases of eclampsia, but it does not explain all cases.

As originally pointed out by Morgagni (1767), and at a later period by Halberstma (1871) and Löhlein, flexure, infraction, stretching, catarrh, or pressure may prevent the flow of urine through the ureters, and condition, directly or indirectly, urinemia. Although no doubt exists as to the occasional operation of this factor, its etiological moment does not approach the significance of renal insufficiency. Out of thirty-two cases of fatal eclampsia, Löhlein demonstrated dilatation of one or both ureters in eight, or twenty-five per cent. Löhlein concludes that in five of these cases an already insufficient urinary excretion was still further limited, or even entirely interrupted, by retrostasis of urine in consequence of compression of the ureters, so that urinemia and its symptom, eclampsia, followed.

Much light has been thrown within a recent period upon the pathological significance of urinemia. The toxicity of normal urine has been demonstrated, although there is some difference of opinion as to the active agent. Bouchard claims to have isolated five organic poisons, and his observations are supported by Battlehuer, who recognizes the ultimate cause of eclampsia to be a decomposition-product like a ptomaine On the other hand, Voit, Feltz, and Ritter, Astachewsky (1881), Lepine (1885), and Stadthagen (1889) maintain the dominant importance of potash salts, while they admit the effect of the retained nitrogenous matters—urea, uric acid, kreatin, and the like—in the limitation of tissue-metabolism. Closely similar views have been expressed by Nothnagel, Strumpell, v. Jakschk, Fleischer, and Peter.

A plausible explanation of the immediate causation of convulsions in cases of urinemia has been given by Carl Schroeder. The experiments first performed by Kussmaul and Tenner prove that epileptiform convulsions are invariably produced only by ligature of the arteries that supply the brain. It is, accordingly, in a high degree probable that puerperal convulsions are caused by cerebral anæmia. How is this cerebral anæmia effected? The most highly probable view is that of vasomotor spasm of the bloodvessels at the base of the brain. In favor of this view there are the following facts: (1) The inability to explain the cerebral anæmia in any other way; (2) the sudden onset of the convulsions and the rapid *restitutio in integrum;* (3) the negative results of autopsies; (4) the effect of remedies that cause dilatation of the vessels of the brain.

As to the causes of the vasomotor spasm, we have the following facts: (1) The plus state of excitability of the nervous system observed in pregnant, parturient, and

puerperal women as in children, so that a vasomotor spasm will occur, the operation of a cause that at other times would produce no such effect; (2) the vasomotor centre is more irritable, especially during labor; (3) with the predisposition upon the part of the nervous system in general, and of the vasomotor centre in particular, the toxic state of the blood is amply sufficient to give rise to an explosion. What other irritants are at work it is impossible to say. Possibly, as in epilepsy, irritation of the peripheral nerve-endings—that is, irritation of the uterine nerves, or pressure upon the ischiatic nerves—may play a certain *rôle*.

Of uncommon interest are the recent investigations of Stumpf.[1] This observer found that when the expired air of an eclamptic smelled of acetone, that acetone could always be demonstrated in the patient's urine, distilled or not distilled. Knowing the relation of acetone and allied bodies and acetonuria to the coma of diabetics, he at once sought for sugar in the urine of the same individuals, and succeeded in showing its presence in all the cases in which urine in sufficient quantity for testing could be collected. Stumpf came to the conclusion that, under abnormal decomposition-processes, a nitrogen-free, toxic substance—possibly acetone, or an allied body with the same reaction—is developed that during excretion irritates the kidneys to the extent of nephritis, exercises a pernicious influence upon the coloring matter of the blood, and alters the activity of the liver cells so that glycosuria follows; that this action on the liver cells may go on to destruction of the hepatic parenchyma, the production of acute yellow atrophy with the formation of tyrosin and leucin, and, through irritation of the brain, coma and convulsions. Stumpf leaves to the future the determination whether this body is the result of an agent of infection derived from without, or whether it is derived from the fœtus in utero. Winckel is of the opinion that the predisposition to eclampsia in multiple pregnancy, the fatal effect of the eclampsia upon the fœtus, the peculiar rigor mortis of the infants, and, finally, the item that with the death of the child in pregnancy the danger to the mother grows less—that all these facts indicate a close relation between fœtus and mother in the genesis of eclampsia.

Gustav Braun[2] has reported several cases of elampsia in which hemorrhagic hepatitis was the most significant lesion.

Suggestive as the observations of Stumpf and Gustav Braun are, facts are as yet too few to admit of generalization. The importance, however, of more exact analysis of the blood and urine in all cases is obvious.

Passing mention must be made of the Traube-Munk-Rosenstein hypothesis, if for no other reason, because Dr. Freer, of Chicago, some years ago performed certain experiments that led him to broach a similar supposition. Traube's view was that the hydremic state of the blood incident to pregnancy, and increased by the loss of albumin in Bright's disease, constituted the important predisposing factor; that the blood pressure is elevated on account of the heart-hypertrophia of pregnancy; that, under the reflex stimulus of uterine contractions, blood pressure becomes so great as to cause œdema of the middle brain and cerebral cortex, resulting in pressure-anæmia that is followed by coma and convulsions. Rosenstein modified this hypothesis by the omission of the effect of the loss of albumin by the blood. He merely eliminated the nephritis. These notions, as well as the conception of eclampsia as a form of acute epilepsy, at present possess a purely historical interest.

The notion that eclampsia is an example of infection is by no means new. The fact that the disease is always sporadic, never epidemic, renders this hypothesis improbable. But it is quite possible that the Bright's disease may be due in certain cases to infection. Out of five cases recorded by Doléris and Pavey, two were ascribed to an infection nephritis. In these cases it is claimed that the infection of the blood pursued a course parallel with the convulsive seizures. The experiments of E. Blanc,[1] with microbes isolated from the urine of an eclamptic tend to support this view. Inoculations of rabbits with these microbes were followed by convulsions in some cases, and by infection nephritis in others. Upon this phase of the subject, however, Dr. Bayard Holmes has something to say.

About thirty cases of eclampsia have come under the speaker's observation in hospital and private practice. In all of these cases the etiology was perfectly clear. They were all examples of urinemic convulsions, conditioned upon Bright's disease.

(To be continued.)

[1] Verhandlungen des ersten deutschen Gynäkologen Congresses in München: Archiv. f. Gyn., Bd. xxvii., Heft 3, S. 471; Münchener med. Wochenschr., 1887, Nos. 35 und 36.

[2] Sitzungs-Berichte der Geburtshülflich-Gynäkologischen Gesellschaft in Wien. I. Jahrgang.

CORRESPONDENCE.

THE INTERNATIONAL CONGRESS OF THERAPEUTICS.

(From our Special Correspondent)

THE International Congress on Materia Medica and Therapeutics held its first meeting on August 1st, under the presidency of Dr. Moutard Martin; the Congress immediately divided itself into a Section of Therapeutics and a Section of Materia Medica.

In the Section of Therapeutics, the first communication was by Prof. Semmola, of Naples, who spoke on the subject of chromocytometry applied to the indications for mercurial treatment and alterative medication. One of the great difficulties, he said, is to know when to stop the treatment, or, again, when to begin it. This exact measure will be given by making a hemoscopic or hemometric examination of the blood before and during the mercurial treatment; the number of red corpuscles and the proportion of hæmoglobin are always in a constant relation to the biological action of mercury, and this action varies according to its taking place in a syphilitic or in a healthy organism; hence, before a mercurial course is begun, it is important to make a chromocytometric examination of the blood. After the disappearance of the specific symptoms, this same examination is to be repeated every three or four days at least. If the proportion of hæmoglobin increases, the mercury is still indicated; if the proportion diminishes, the patient is cured, and the mercury then acts as a toxic drug. We must always fear that the mercury may act as a destroyer of the blood corpuscles. The

[1] La Semaine Médicale, 1889.

apparatuses which he recommended are the chromocytometer of Bizzozero, the hemochrometer of Malassez, and von Heischl's hematometer. He finally formulated his views as follows: "Chromocytometry must be regarded as giving the exact measure of the indication and use of the drugs which modify the activity of the tissue-changes, because the final and real therapeutic result of this action is unquestionably an increase in number of blood corpuscles, which means an increase of hemoglobin."

M. Cros, of Paris, next made a communication on the mode of action of vesicating substances. He thinks that the vesicating action is a physical one at first. There is produced a dissolution of the vesicating matter in the epidermis, which then behaves itself toward the derm as a real vesicating substance, the physiological action on the derm being secondary.

M. Lavaux, of Paris, read a paper on the "Use of Cocaine in the Treatment of Urinary Diseases." He said that the cocaine solution must not only be placed in contact with the penile portion of the mucous membrane of the urethra but also with the neck of the bladder; in cystitis cocaine is excellent. In few words, the rules of the treatment are: 1st. To anæsthetize at the same time the urethra and the bladder; 2d. To use only a 4 per cent. or even 2 per cent. solution of cocaine, but in sufficient quantity to saturate the vesical mucous membrane. This means the injection of four to six fluid-drachms of such a solution. 3d. This solution is to be injected into the bladder without the use of a sound. The use of cocaine is also to be recommended in spasms of the membranous portion of the urethra, in cystalgia or vesical neuralgia. One fact to be remembered is, that cocaine allows the desire to urinate to remain even if the anæsthesia of the vesico-urethral mucous membrane be complete. This means that it is not the sensibility of the prostatic mucous membrane which plays the principal *rôle* in the desire to urinate, as sustained by MM. Küss and Duval, but that it is vesical distention, as advanced by Prof. Guyon.

MM. Crocq and Lefebvre, of Belgium, would not admit this last physiological deduction, and made the remark that certain patients have a desire to urinate even if there be no fluid in the bladder.

Dr. Guelpa, of Paris, next spoke on the "Treatment of Diphtheria." He said that two of the most important points in the treatment of this disease were to follow a local treatment, and not discontinue this treatment during the night. Antiseptic irrigations and vaporizations are to be resorted to; we must be careful not to apply our treatment too roughly, and guard against wounding the surrounding mucous membrane; for recent investigations have shown that the diphtheritic bacillus can only penetrate the organism through an abraded mucous membrane. Pulverization and irrigation must be made wherever diphtheritic membranes are present; this is the reason why he believes in an early tracheotomy. In cases of nasal diphtheria, the nasal fossæ must be thoroughly cleansed out, and if the disease extends to the maxillary sinus, this cavity must be opened by trephining.

In the afternoon session, Dr. Dujardin-Beaumetz introduced the following subject: "Antithermal Analgesics." He said that this question had been brought before the Congress so as to determine the special action of this class of agents, which are, as is well known, not only analgesic, but also antithermics, and even antiseptics. Some act as antiferments, and combat high temperature by preventing this fermentation; others act on the blood corpuscle, and decrease the temperature by acting on the respiratory power of the blood; while a third class modify the calorific centres of the cord by acting directly on the cerebro-spinal centres; this last class of antithermics possess almost exclusively analgesic power. An important point also is to determine the relation existing between the atomic constitution and the physiological properties of these different medicines. From a series of experiments made by Dr. Dujardin-Beaumetz and Dr. Bardet, the following laws have been obtained, which give an appreciation of the antiseptic, antithermic, and analgesic properties of the new drugs obtained from the aromatic series:

1. The antiseptic effects produced belong especially to the hydrated series (phenols, naphthols, etc.).

2. The antithermic actions are dominant in the amidogenous series (acetanilide, kairine, thalline).

3. Finally, the analgesic properties are found in this last group of amidogenous series, where an atom of a fat radical, and particularly methyl, is substituted by an atom of hydrogen (acetphenetidine, methylacetanilide, dimethyloxyquinizine).

Prof. Lépine, of Lyons, said that even in the healthy animal the antithermic action of these drugs is a complex one; they produce an arrest in the activity of the protoplasms, and most of them act on the red blood-corpuscles by transforming the hemoglobin into methemoglobin, or again attack the tissue itself of the blood corpuscle; but their influence is especially marked on the nervous system. The remarks which he made in 1886, on the nervous action of antipyrine, made him say at that time that all true antipyretics were nerve drugs. This moderating nervous action of antipyrine and the other antithermics is not only an analgesic property, but he has found that under the influence of these agents the quantity of glucose used is diminished in the capillaries; that there is a diminution of the glucose at the expense of the glycogen, in the liver and muscles, and that in certain cases one can even find a diminution in the formation of the muscular and hepatic glycogen. Their action on the quantity of albuminoid used, which depends on the age and dose, is a variable one, and is not to be neglected when considering the production of heat. It is to a diminution in the consumption of hydrocarbons in the economy that we must attribute, for the greater part, the reduction in the temperature observed in small animals. M. Lépine concluded by saying that these agents are poisonous to the protoplasm, but much less active than quinine; their principal action being on the nervous system, they modify certain sensitive impressions and, at the same time, the production of heat, by preventing the too great use of hydrocarbon materials.

M. Masius, of Liege, said he preferred the use of phenacetine in the treatment of tuberculosis and typhoid fever, as well as in the different forms of rheumatism. As an antineuralgic, he uses this drug by giving it in doses of from fifteen to forty-five grains, its action is less dangerous than antipyrine. In animals, phenacetine, given in toxic dose, brings on death by asphyxia, while in smaller doses it will produce motor and sensory paralysis.

Dr. Francis H. Williams, of Boston, did not believe in the use of analgesics during fever; he said that they produce only a temporary relief; but, on the other hand, their

use prolongs the appearance of convalescence. Again, in certain cases, their use may be accompanied by danger —these facts are sustained by Dr. Stokvis, of Amsterdam.

Dr. Desplats, of Lille, had used antithermics for more than ten years, and finds constant satisfactory results: the temperature falls, secretions are more profuse, and the patient feels much better; but their action being of a temporary character, they must be continuously administered.

M. Snyers, of Liege, had made comparative studies of the different analgesics in regard to the symptoms produced by kairine, antipyrine, thalline, acetanilide, and phenacetine, and he has found that antipyrine was by far the safest to be used.

Dr. Bardet, of Paris, next spoke on the use of the new analgesic, methylacetanilide, known as exalgine; he finds it a powerful analgesic, in all neuralgias due to cold or congestion. Out of 75 cases observed, he finds that in 10 cases of rheumatism the pain completely or almost completely disappeared, in 5 cases doubtful result, in 3 no result at all; in 3 cases of cardialgia, good results; in 14 cases of neuralgia, rapid results; in 13 cases, certain results but less rapid; in 5 cases, negative results—they were cases of chronic sciatica.

Dr. Dujardin-Beaumetz, as well as M. Bucquoy, did not think exalgine as reliable as antipyrine; it has a greater tendency to bring on cyanosis and vertigo, which appear whenever the dose of the drug reaches 7½ grains.

Next came the discussion on the second question which had been placed before the Congress, "On Cardiac Tonics." M. Bucquoy opened the subject, by saying that in cardiac therapeutics our aim is not so much to combat the lesions of the organ as to sustain its action. For a long time digitalis has been the principal agent, and it is one that must not be disregarded to-day, although many other drugs have been recommended instead, such as convallaria maïalis, adonis vernalis, strophanthus, and squill. Most of them act by increasing the systoles of the heart, and especially the ventricular systole, making the pulse regular by increasing the arterial tension and producing a more or less abundant diuresis; it would be well, however, to know what is their action on the vaso-motor system, for they are not all vaso-constrictors as digitalis; it would be also useful to ascertain how long they can be administered without danger of accumulation. It is also necessary to know whether the alkaloid, the active principle of the plant, can be prescribed like the plant itself and if the effects produced are the same.

M. Masius, of Belgium, preferred to administer digitalis in powder for a heart tonic, while Dr. Dujardin-Beaumetz gave preference to the infusion of digitalis.

M. Bucquoy gave an account of 206 observations which he had made with strophanthus. Under the influence of strophanthus the pulse becomes slower and more regular; it takes the character of the aortic pulse, even in pure mitral patients. When in a mitral patient the pulse becomes aortic under the influence of the drug, when the pulse, which was primarily feeble, becomes able to arise high the sphygmographic needle, and give ascending lines equal to the normal rather than to the aortic pulse, we can say that we have to deal with a "strophanthic pulse." In mitral patients the pulse becomes aortic, while in aortic cases the pulse of Corrigan is exaggerated. M. Bucquoy thinks strophanthus is a very safe drug and capable of being given for an indefinite time; in regard to diuresis, it has a constant action. Its action will be useless if the cardiac muscle is degenerated.

M. Féréol prefers the infusion of digitalis, yet recommends the use of digitaline as advised by Prof. Potain, in large doses; one dose being sufficient for eight or ten days.

Prof. Semmola, of Naples, also prefers digitaline.

M. Crocq, of Brussels, read a communication on the "Treatment of Pneumonia by Acetate of Lead." He first remarked that pneumonia is not a disease that runs a very regular course; some cases present a defervescence of the fever on the seventh day, while others will go on much longer—several weeks. He said that at present pneumonia often passes into chronic pneumonia on account of our expectant plan of treatment, instead of favoring the absorption of the pneumonic exudate. He thinks acetate of lead is most efficacious to prevent a pneumonia from becoming chronic. In Germany this drug was formerly recommended by Nothnagel and Rossbach. Leudet has used it in France. By means of this treatment the speaker has observed that the number of pulsations are greatly reduced, the elevation of temperature comes down rapidly, and the sputa disappear. Sometimes he associates laudanum with the acetate of lead to prevent diarrhœa. He recommends a minimum dose of six grains, while up to fifteen grains can be given to an adult in twenty-four hours; the treatment can be continued without danger from twelve to fifteen days. In cases of pneumonia in a healthy, vigorous subject he prefers bloodletting; but in all pneumonias of the weak, of alcoholics, of diabetics, it gives marvellous results.

Prof. Semmola, of Naples, next read a paper on the "Use of Continuous Electric Currents in Chronic Lead-poisoning." He claimed that this method stimulates the nutritive process, and favors the elimination of the lead by the different excretory organs; a very few days after beginning the treatment it becomes possible to find lead in the urine, and this elimination continues as long as the treatment is kept up; the lead gum-line gradually fades away; the atrophied muscles become more active, and he had even seen old paralysis of the extensors disappear under this treatment; formerly he only placed the negative pole in simple communication with the bath, and the positive pole on the patient; now he places one pole on the neck, the other on the vertebral column. By these means he has obtained twelve complete cures of lead-poisoned patients who had been placed in an incurable hospital. This treatment seems to be of no avail when the patient has presented signs of encephalopathy.

M. Constantin Paul said he had never been able to find lead in the urine of his saturnine patients who were treated by electricity, unless iodide of potassium was given at the same time.

Prof. Semmola said he never gave iodide of potassium in any of his cases.

M. Pétrescu, of Bucharest, read a paper on the hyperemetic action of digitalis, and its antiphlogistic action on pneumonia; his conclusions are that pneumonia can be aborted, if treated early enough, by large doses of digitalis; this treatment of pneumonia is the most rational one, being based on its pathogenic indication; the efficacy of this treatment is also confirmed by statistics; the lowest mortality is found in cases of pneumonia treated

by large doses of digitalis. One to two drachms of the leaves of digitalis given in an infusion is the real therapeutical dose for a pneumonia of adults. The tolerance and non-toxic effect of this therapeutic dose are given in his work, made after a series of 757 observations.

Prof. Semmola is somewhat sceptical about giving such formidable doses of digitalis without dangerous effects being produced.

M. Bucquoy examined the tracings of the patients of M. Pétrescu, before and after treatment, and he found that all but one presented tracings of intoxication.

M. Constantin Paul questioned the term tonic, given to all the cardiac drugs of which the different members had spoken. The model of tonics, he said, is sulphate of quinine. A tonic is a condensing drug which furnishes to the organism a force which it retains. If quinine is used in a very high fever, the temperature will come down to normal, but not below; now again, if in a very low temperature—much below normal, quinine be given, the temperature will go up to normal. Do the cardiac remedies act in this manner? No. If digitalis is given, it will restore the contractile energy of the heart; but if continued, its useful action will become dangerous.

He does not approve of sparteine nor caffeine. As to strophanthus or digitalis, he did not consider them as direct cardiac tonics, but as secondary ones, if the dose is not pushed too far. The increase of the cardiac energy appears only when the resistance of the blood-vessels diminishes by the fact of the diuresis. If diuresis does not take place, a few punctures with the thermo-cautery will evacuate the serosity; the vascular resistance diminishes, and soon after the cardiac contractions are reinforced; but if we give to an œdematous patient strophanthin, or digitalin when he does not urinate and in whom we have made no punctures, we are stuffing fuel in him which is sure to kill him. He thinks convallaria maïalis a good remedy to remove the œdema in arhythmic patients in whom the pulse remains weak. We must not forget alcohol, hot wine, ether, infusion of stimulating aromatic plants, and, finally, in aortic disease especially we have a powerful heart tonic—namely, a hypodermic of morphine.

Dr. Féréol sustained the views of M. Constantin Paul in regard to convallaria, and said that it can be taken for a long time without any danger to the patient.

Professor Semmola next read a short paper on "Sulphur as a Medical and Surgical Antiseptic." He had used sulphur for intestinal antisepsis, especially in typhoid fever; he also places pulverized sulphur in the bed of his fever patients.

M. Hallopeau read a communication on the "Nature of Alopecia and its Antiseptic Treatment." The author thinks that alopecia is always a parasitic disease, the parasite is situated very deeply on a level with the hair papilla. The disease is transmissible by contact. The treatment must be prophylactic and curative. The scalp must be very often washed with antiseptic solutions; the scalp must be modified by means of a blister and then Bardet's liquid is to be used; a well-treated alopecia ought to disappear in three or four months.

M. Hallopeau read another short paper in which he recommended certain antiseptics for the local treatment of syphilis. Iodoform can be used, or the different mercurial preparations, such as the acid nitrate of mercury, sublimated solutions; he recalled Diday's phrase, namely, that local treatment is always useful, oftentimes necessary, sometimes indispensable.

M. Jorissenne, of Liege, in a short communication, expressed his opinion that fissures of the anus are due to microörganisms; hence, he thought that the most rational treatment is the antiseptic method, which is at the same time analgesic. Corrosive sublimate solution has been found very effective; used as an ointment it is painless, easy of application, and efficacious; inunction must be made thoroughly, and the finger must be introduced at least for an inch and a quarter into the rectum.

PARIS, August 10, 1889.

A WINTER VACATION TO THE WINDWARD ISLANDS.

V.

TOBAGO was our next point, where we arrived long before daylight the next morning. But few of us went ashore, on account of the high surf, which prevented the ship taking cargo. It was a place of interest to us all, and Robinson Crusoe was the topic of the day. We spoke of him as an entity once among living men. We saw photographs of his cave; we speculated where was the beach upon which he saw footprints in the sand, and upon which rock the ship foundered. It was from Trinidad that the cannibals came, and they were beyond doubt man-eating Caribs. We consulted maps and studied ocean currents and prevailing winds, and the only island corresponding to his description that would intercept a vessel in a storm on the homeward voyage from the Brazils was Tobago. All this was soberly discussed and settled. Robinson Crusoe was real to all of us, as he will be to generations to come. He is not the only creation born of genius and of art that has cast a spell over the minds and hearts of men. These creatures are not shadows, but real, substantial, ruling the boundless dominion of the mind by the same agency that has placed the sceptre in the hands of those who rule—the subtile essence of the spirit. Have not as strong men sprung from the brains as from the loins of men? Are they not all the more potent from never having known the fetters and limitations of the flesh?

I risked the dangers of the surf and got safely ashore without wetting my camera. The little town of Scarborough straggled over a series of hills fairly buried in a wilderness of cocoanut palms, bread-fruit, nutmeg and broad-leafed plantains. One of the largest ceiba or silk-cotton trees which I met with among the Islands I saw here. It was an immense trunk with buttresses extending outward from two to five or six feet to the ground. The top extends widely and gives a dense and ample shade. It is a tree sacred to Obeah, and under it the negroes hold their fetich deviltry. The heat was so extreme that I was glad to secure a boat and return to the ship. On my way I secured a very good negative of the surf with the long line of palms that decorate the beach. It was an unfortunate trip for the ship, as she secured no freight, but the passengers were pleased with the opportunity to see the island.

Another day passed at sea and we were at the end of the route, and swung at the wharf at Georgetown, Demerara. We put up at the Tower Hotel, kept by a colored woman who told me that she was educating her daughters in Germany. The coolie, as in Trinidad, does

all the work and the negro of all shades may be as lazy as he pleases. He gets very little consideration here. Demerara is a Crown colony, and consequently is a white man's government. Georgetown is intersected by canals which keep up a system of irrigation as well as drainage. We saw several fine plantations, all with large coolie quarters attached. On our way we passed through the famous avenue of royal palms extending on both sides of a road near the coolie quarter of the town for about a mile. The sight was a beautiful one, but the photograph was disappointing, although a fair negative. Tropic foliage to be effective in a photograph must be massed. There is a beautiful botanic garden surrounding Government House where we found some very effective groups of foliage. The town has little of interest. The shops were not nearly so well stocked as at Trinidad. In fact Demerara is all sugar; that is its sole motive to exist, no other trade is cared for or invited. I, for one, was very glad after a dull and hot Sunday to get on board again and double back on our return voyage.

Barbadoes was our first return port. Here began the hopeless struggle of the good ship "Barracouta" for a cargo. She had failed at Georgetown and Port of Spain, but she was going to be in luck at Barbadoes; but the only cargo that she took on was much-needed water. At St. Lucia, St. Vincent, Antigua, Montserrat, it was only a few tierces here and a few bags there. At the latter place, 120 tierces of lime-juice were secured. This island is famous for its limes, which are exported by a rich company who have a monopoly of all the fruit. No lime-juice can be sold except through the company. It all goes to England, and thence over the world. It is worth mentioning that the tierces were shipped to England by the steamer company at the same rate the American freight was taken to New York —on the plan of what our railroad shippers call the "long haul," I suppose.

Had it not been for our stops on the return voyage, my expedition would have been a failure, photographically speaking.

I began my work subject to the unnecessary fear of over-exposure. The thin, flat negatives, characterized by a general want of contrast, which had been exhibited at the Camera Club by those who had been to the tropics, were explained as the result of over-exposure. At the same time, experts in outdoor work, whom we would find among the professionals, tell us to "stop down" and use our most rapid shutter. Nothing could be better designed to deceive the amateur accustomed to our northern summers with their clear, white lights, blue sky and dry air than the full glare of a tropic sun in a cloudless sky. The conditions favorable to rapid work seem the same, only greatly intensified in degree in favor of the tropics. But actually the conditions are reversed. A brief analysis of what exists at the tropics will, I believe, prove this. Of course, what I say relates to the marine tropics. In elevated and dry interiors within that latitude we have an approach to the conditions that prevail during midsummer in the temperate zone.

In the first place, the tropical objects that we have before the camera are full of contrasts. There is a peculiar glare on all objects exposed to full sunlight, with a corresponding depth to the shadows. There appears to be less diffusion in the light, like the shadows to electric light; but this is not so. It is simply contrast; the illuminated surfaces are very bright, the shadows very dark. In masses of tropic foliage this is largely due to their structure and density, but it is quite noticeable in architectural objects also. In wide scenic effects the same trait prevails.

In the mountains it is rare to find broad surfaces exposed. The sides are carved into ravines, pinnacle and cone merge into each other in aërial perspective. Dizzy and tortuous *arêtes* wind up the sides. The profiles of the mountains break abruptly, upheaving tier upon tier, like steps and winding stairways. Strange, weird, unearthly forms that tell of a world in ruins. All this is draped by a tropic profusion of foliage in variegated greens—a face of age in a mask of external youth. Everywhere you observe the marks of the fiery origin of these exquisite bits of earth, the fragments of what was once a mighty continent, caught like brands from the burning in the ages of its cataclysm. These surfaces are never illuminated alike; one side takes the full sun-glare, and the other, in deep shadow, appears black in contrast. Here the earth, with tropic mystery and grace, lends itself to artistic conditions met with rarely elsewhere. The heart of the enthusiastic amateur aches to get the marvellous scene upon his plate.

A difficulty that the photographer has to contend with, but which adds greatly to the infinite beauty of the mountains, and that would be clear to the artist with his pencil, is the dense volume of cloud that settles upon the summits. The trade-winds toy and sport with the clouds that by day and night rest in majestic masses upon the mountains. They are perpetually in motion; breaking into fragments and trailing purple streaks of shadows after them, winding in wreaths about the thin and twisted edges of *arêtes*, or piled in portentous columns of blinding whiteness when the sun impinged upon the mass, and with the blackness of a storm-cloud on the other side. The shadows of these dense cumuli often blot out all detail to the eye, even at noon-day. All long distance views were very thin, and required intensification to give even a poor print. Roughly stated, with the same stop and sensitiveness in the plate that would secure a good negative in the States, five times the exposure was required in the marine tropics with the most favorable conditions. I am speaking now of long-distance views. For near views and street scenes a good drop-shutter picture is nearly impossible.

All that I saw in the Islands had the same fault of under-exposure, although taken by men familiar with the conditions. Two causes contribute to this. The atmosphere is at a point of saturation with moisture. This actually screens the light, and just in proportion diminishes the actinic power. From this excess of moisture the second condition results, namely, the marked yellowness of the light, which diminishes greatly the actinic power. At Tobago, for instance, I made an exposure on the Government building. Its front was adorned with a portico. The columns were white. By reflection the yellowness of the light was overcome, and consequently gave good printing density, while the sky printed through, even under tissue-paper, a slaty-gray. Surf scenes, which were often very beautiful, suffered severely from under-exposure, as in order to get the effect you have no option but rapid work.

To Dr. Benjamin Sharp, of the Academy of Natural

Sciences at Philadelphia, I am indebted for instruction which put me right in the matter of exposure. I had the pleasure of meeting him at Tobago, so that I was enabled to correct the error on my return. I trust any of my photographic friends who go to the marine tropics will not commit my blunder, but will give ample time and full exposure.

When homeward bound we may say that our delightful expedition was ended. We had seen man under new conditions in the paradise of indolence—the Islands of the Afternoon, where no man toils.

ELY VAN DE WARKER.

THE INDIAN APPRECIATION OF TESTICULAR JUICE.

To the Editor of THE MEDICAL NEWS,

SIR: In a recent issue of THE NEWS, there appeared a note stating that the Indians of the Northwest have used a powder prepared from dried testes. To this material results are attributed which must be due merely to the imagination. No large knowledge is needed to show that such a powder must be devoid of all active property—for it is pretty nearly certain that the power possessed by testicular juice must be due to the presence in it of a *leucomaine*.

I have long known of a practice carried out by the Cheyenne Indians—the best favored, ablest, and the bravest of all the Indians of the Rocky Mountains and Plains. The older Indians encourage the eating of raw buffalo and antelope testes by the young warriors. They maintain that the juice confers on them increased power in all directions, especially as to the sexual function and bravery.

In 1859–60, when serving at the Post of Fort Merrion, New Mexico, I saw a young Cheyenne "buck" with two large testes, one in his mouth on which he was chewing vigorously, swallowing the juice as rapidly as he could, whilst out of the corners of his mouth the fat ran freely. The Indian did not look altogether happy as he went through his gastronomic feat, although he strove hard to preserve that stoical demeanor which every Indian is supposed to maintain under all circumstances. The older bucks stood around, giving an occasional grunt of satisfaction and approval, but the white spectators exhibited no little disgust and some were nauseated.

It now appears that the Indians were not wrong in their opinion of testicular juice. Again we learn—as saith the Preacher—that there is nothing new under the sun, and that which has happened once will happen again, and all is vanity.

R. B.

PHILADELPHIA, Sept. 2, 1889

NEWS ITEMS.

The Prophylaxis of Tuberculosis.—In our issue of August 24th we gave the report of the French Commission on Tuberculosis. The discussion of the report was continued at the meeting of the Académie de Médecine held August 13th. After a lengthy debate, Dr. Villemin closed the discussion by saying that the danger from the sputa of phthisis was unquestioned, and that the Commission's recommendations for strict hygienic measures and disinfection were endorsed. In the pursuance of these measures, the careful disinfection of railroad coaches should not be omitted. Only, the question of the danger in using the flesh of tuberculous animals was still unsettled; he, therefore, proposed that a committee be appointed to investigate this most important subject.

The Academy unanimously acquiesced in this proposal, and a committee was appointed consisting of Drs. Villemin, Verneuil, Germain Sée, Cornil, and Dujardin-Beaumetz.

A New Swiss Pharmacopœia.—A new Swiss Pharmacopœia is shortly to be published. A request has been sent, by the collaborators, to Swiss medical societies and practitioners, requesting suggestions as to the introduction of new remedies and the retention of old ones.

Death from Suspension.—Another case of death has occurred from the suspension treatment of locomotor ataxy—this time in Italy. The case, which is reported in the *Riforma Medica* of July 19th, occurred in the clinic of Professor E. Galvagni.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 20 TO SEPTEMBER 2, 1889.

BAILY, JOSEPH C., *Lieutenant-Colonel and Surgeon* (Medical Director Headquarters Department of Texas).—Is granted leave of absence for one month.—*S. O. 54, Headquarters Department of Texas, San Antonio, Texas*, August 17, 1889.

Commanding Officer at Jackson Barracks, Louisiana, telegraphs the Adjutant-General of the Army that HARVEY E. BROWN, *Major and Surgeon*, died at Jackson Barracks to-day, at 1.40 o'clock P. M.—*Jackson Barracks, New Orleans, La.*, August 20, 1889

POPE, BENJAMIN F., *Major and Surgeon.*—Is granted leave of absence for one month, with permission to apply through Division Headquarters for an extension of two months.—Par. 7, *S. O. 54, Department of Texas*, August 17, 1889.

By direction of the Acting Secretary of War, WILLIAM S. TREMAINE, *Major and Surgeon*, now on sick leave of absence at Buffalo, New York, will report in person to the commanding general Department of the Missouri, for assignment to temporary duty at the post of Fort Leavenworth, Kansas.—Par. 4, *S. O. 198, Headquarters of the Army, A. G. O., Washington*, August 27, 1889.

PORTER, JOSEPH Y., *Captain and Assistant Surgeon.*—The resignation has been accepted by the President, to take effect August 29, 1889.—Par. 11, *S. O. 200, Headquarters of the Army, A. G. O.*, August 29, 1889.

BANISTER, W. B., *First Lieutenant and Assistant Surgeon.*—Is granted leave of absence for fifteen days.—Par. 2, *S. O. 82, Headquarters Department of Arizona, Los Angeles, Cal.*, August 23, 1889.

PROMOTIONS.

MATTHEWS, WASHINGTON, *Captain and Assistant Surgeon.*—To be Surgeon, with rank of Major, July 10, 1889, vice Town, promoted.

EWING, CHARLES B., *Assistant Surgeon.*—To be Assistant Surgeon, with the rank of Captain, July 5, 1889, after five years' service, in accordance with the Act of June 23, 1874.

MCCAW, WALTER D., *Assistant Surgeon.*—To be Assistant Surgeon, with rank of Captain, August 20, 1889, after five years' service, in accordance with the Act of June 23, 1874.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM AUGUST 3 TO AUGUST 24, 1889.

LONG, W. H., *Surgeon.*—To proceed to Gallipolis, Ohio, as inspector, August 7, 1889.

WHITE, J. H., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, on account of wound, August 16, 1889.

CONDICT, A. W., *Assistant Surgeon.*—Detached from Revenue Bark "Chase," and ordered to Louisville, Kentucky, for temporary duty, August 19, 1889.

GROENEVELT, J. F., *Assistant Surgeon.*—Ordered to South Atlantic Quarantine Station, for temporary duty, August 8, 1889.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, SEPTEMBER 14, 1889. NO. 11.

ORIGINAL LECTURES.

LENTICULAR REGULAR ASTIGMATISM.

A Lecture delivered before the Post-Graduate School of Ophthalmology. Session of 1888–89.

BY SWAN M. BURNETT, M.D.,

PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY IN THE UNIVERSITY OF GEORGETOWN; OPHTHALMIC SURGEON TO THE GARFIELD HOSPITAL; AND DIRECTOR OF THE EYE AND EAR CLINIC AT THE CENTRAL DISPENSARY, WASHINGTON.

GENTLEMEN: We have learned from our preceding studies that the refracting apparatus of the eye consists of the cornea and crystalline lens. We have also learned that the ordinary so-called anomalies of refraction are not, strictly speaking, anomalies of refraction at all, but only variations in the anterior-posterior diameter of the eyeball, the refracting apparatus proper taking but little part in the production of either myopia or hypermetropia. I have myself demonstrated by a large number of measurements of the cornea by means of the ophthalmometer of Javal and Schiötz that the refraction of the cornea, which is the principal refracting medium of the eye, is no sort of an index to the general refractive condition of the eye as regards its being myopic or hypermetropic.[1] The refraction of the cornea of an emmetropic eye I have found may vary from 47 D. to 39 D.; the average being from 43 D. to 45 D. And I have found, also, that in myopia there may be a low corneal refraction and in hypermetropia a refraction of the cornea in excess of some highly myopic eyes.

We are, unfortunately, not in a position to determine with the same ease or accuracy the refraction of the crystalline lens. We cannot measure the curvature of its surfaces as readily as we can those of the cornea, but we have no reason to suppose from what knowledge we have that its static refraction varies sufficiently in different individuals to bring about any important changes in the general refraction of the eye. Moreover, the changes at the fundus of the eye in myopia which we are able to distinguish by means of the ophthalmoscope, in the form of stretching and thinning of the choroid, and the evident flattening of the globe, which is often apparent on external inspection in hypermetropia, are quite sufficient proofs that the true cause of general ametropia is an alteration in the position of the retina in its relation to the focal point of the refracting apparatus of the eye as a whole. Whenever, therefore, we use the term "anomalies of refraction," we should add, mentally at least, "in relation to the length of the eyeball."

The case is quite different, however, when we come to astigmatism, and particularly to the regular form in which the refraction in the meridians at right angles to each other is different. It is true that an attempt was once made to attribute some astigmatic effect to an irregularity of the curvature of the fundus at the macula lutea, but it certainly cannot occur very often nor to any considerable extent in the production of regular astigmatism.

We are now able to assert that in the vast majority of cases regular astigmatism has its seat wholly in the cornea, and is thus really the only anomaly of refraction, properly speaking, among the various forms of ametropia. In the statistics already alluded to, it was found that only in a rather small minority of cases was the total amount of astigmatism essentially different from that found in the cornea by the ophthalmometer of Javal. My further experience extending now to several hundred cases in addition to those reported in the paper referred to, has only more strongly confirmed the opinion then expressed, and it is, moreover, in perfect accord with the observations of all others who have made any extended use of this valuable instrument. And I wish to state again, with added emphasis, my firm belief in the great practical utility of this most ingenious apparatus. In my treatise on astigmatism, published in 1887,[1] in which is to be found the first description of the instrument printed in English, I stated that in my opinion it was the most important instrument for positive diagnosis placed in our hands since the invention of the ophthalmoscope. The constant daily use of the instrument since that time has in no way modified the favorable opinion then expressed, and I never deem a case of refraction complete in its examination until the cornea has been measured in all its meridians. I am pleased to know that in this position I am sustained by so high an authority as Prof. Snellen, of Utrecht, the successor of the immortal Donders. It has been objected in some quarters, that while ingenious it is not practical. On the contrary, I claim that it is more easily and successfully manipulated than any other of the apparatus of the ophthalmological armamentarium.

Its more extended employment is prevented, I think, by two causes. First, its cost, which in this country has been about one hundred and fifty dollars, inclusive of duty; though that, perhaps, has not been so much of an obstacle as the second, which is the great difficulty of getting them when wanted. It has sometimes taken three years to get one after it has been ordered. This latter difficulty however, seems now likely to be obviated by the undertaking of a new firm in Paris (A. Goubeaux, 216 Boulevard St. Germain) which promises to keep a stock of the newest and best patterns on hand at two hundred and fifty francs net.

The instrument is used but little in Germany, which can be attributed only to an unworthy national pride, which prevents the Teuton of this generation from accept-

[1] An analysis of the refraction of 576 healthy human corneæ examined with the ophthalmometer of Javal and Shiötz. Trans. Amer. Oph. Soc., 1888.

[1] A Theoretical and Practical Treatise on Astigmatism. J. H. Chambers, St. Louis. Pp. 123–133.

ing anything as good "which comes out of Nazareth." As Javal himself once wrote me "when there appears a German modification of the ophthalmometer then it will come to a general acceptance." As, however, Javal has produced an instrument so nearly perfect for its purposes that it is scarcely possible to make any modification that shall be an improvement, we fear that the most practical astigmometer yet devised must remain to the credit of the French. It is curious, too, that it is used but little, if at all, in Great Britain. When, however, the British are once brought to a realizing sense of its true merits, and know its practical advantages, their customary conservatism will give way and they will begin to employ it.

The constant use of the ophthalmometer (or more properly the *keratometer*, since with it we measure the refraction of the cornea alone) has enabled us to discover the important fact to which allusion has been made, that regular astigmatism is for the most part resident in the cornea and that there are very few corneæ that are perfectly spherical in form; a small amount of corneal astigmatism—rarely less than 0.25 D.—being found in eyes which to the test are emmetropic.

Another interesting fact which has been brought to light by those examinations, is that corneal astigmatism is, with the rarest exception, "according to the rule"—that is, the meridian of greatest refraction is the vertical The opposite condition, where the greatest refraction is in the horizontal meridian and "contrary to the rule," must then be sought for in some other part of the refracting apparatus. These facts lend support to the opinion that the pressure of the lids plays an important part in the production of the common forms of astigmatism.

But while it is a fact that the corneal astigmatism commonly represents very nearly the total astigmatism of the eye, the exceptions are frequent enough to merit our attention and interest.

Of course, the only other part of the eye which could possibly be concerned in the production of astigmatism is the crystalline lens. It is a curious fact in the history of astigmatism that the first recorded case of the anomaly was demonstrated to be resident in the lens. Thomas Young, the great English philosopher, who gave us numerous and valuable facts, hints, and suggestions in regard to the pure optics of the eye, but led succeeding generations entirely astray on the subject of color-perception, on immersing his eye in water, thereby eliminating the refraction of his cornea, found his astigmatism still persistent. He conceived, and I think very properly, that the astigmatism was due to a position of the lens oblique to the visual axis. It is further interesting to note that the usual law of lenticular astigmatism being "against the rule" was kept in this case, since the far point of his eye for rays diverging horizontally was seven inches, and for those diverging vertically was ten inches, making an astigmatism according to his own calculations of one-twenty-third.

We demonstrated to you in the earlier part of this course how a spherical lens held obliquely to incident pencils takes on an astigmatic action, having two focal lines at right angles to each other and at different distance from the lens, instead of a single focal point. This view of the lenticular cause of astigmatism was the one universally accepted until the measurements of the cornea made in Helmholtz's laboratory in Heidelberg by Knopp, in 1859, led to the discovery that the cornea was the chief seat of the anomaly, and that Young's case was exceptional. Some years later, however, Dobowolsky found, in making some measurements of the cornea by means of the ophthalmometer, that the corneal astigmatism did not always express the exact amount of the manifest general astigmatism, being usually greater. He assumed, therefore, an astigmatism of the lens, opposite in kind to that of the cornea, with a neutralizing influence, and which he thought was brought about by an unequal contraction of the ciliary muscle such that the curvature of the lens instead of being, as in its normal condition, that of a sphere, would assume that of a spheroid with one meredian of greatest and one of least refraction at right angles to each other. He considered, as have others since he wrote, that this unequal contraction of the ciliary muscle was voluntary, or, at least, brought about by the instinctive desire of the individual for the most distinct vision he could get. Javal, among others, has also found that a certain amount of corneal astigmatism is in early life not incompatible with normal vision, becoming "manifest," however, as soon as the accommodation begins to lose power with age.

It has always been a difficult matter for me to understand how such an unequal contraction of the ciliary muscle in its various meridians was possible; nor do I fully appreciate teleological mechanism which enables the muscle to contract with just the inequality that shall neutralize an existing anomaly in the cornea. However, if the fact is as many competent observers state, we must accept it whether we can account for it to our perfect satisfaction or not. Certainly, we know that corneal astigmatism is often covered up by lenticular astigmatism of an opposite character, and becomes manifest only after paralysis of the ciliary muscle.

It is our habit, therefore, when we find the corneal astigmatism, as measured by the keratometer, to be in excess of that revealed by a careful examination by the test-glass, the ophthalmoscope, and skiascopy, to paralyze the accommodation for further examination. I say "careful" advisedly, for very often a small amount of mixed astigmatism escapes detection unless it is diligently sought for. Very often a cylinder of 0.5 or 0.75 D. of an opposite kind and with its axis at right angles to that which has given the best, but not perfect vision, will advance the visual acuteness from $\frac{5}{6}$ to $\frac{5}{5}$, satisfy all the demands of the corneal astigmatism, and render the use of a mydriatic unnecessary. It is only when no glass or combination of glasses comes up to the requirements of the astigmatism of the cornea, that I consider an elimination of the accommodation absolutely demanded for the diagnosis of astigmatism. As far as concerns general ametropia and the presence of a "latent" hypermetropia, it is another matter and the custom of different and equally competent authorities is by no means the same. As for myself, I do not consider a pathological spasm of the accommodation to be the almost constant accompaniment of ametropia, as seems to be the prevalent opinion in some quarters.

The manner in which the accommodation influences the character of astigmatism of the eye, as a whole, is not confined to the partial contraction of the ciliary muscle already alluded to. The contraction of the ciliary muscle in its entirety has a very pronounced

and variegated effect upon the general astigmatism. As you can readily understand, the act of accommodation in moving forward the focal lines of the interval of Sturm can convert a simple or compound hypermetropic into a simple myopic or even a compound myopic astigmatism; or might mask a mixed astigmatism, converting it into the simple or compound myopic form.

I think experience has shown that there is a desire, for most visual purposes, to have the vertical lines most distinct when all cannot be made so. This accounts, in my opinion, for the conversion, in so many instances, of hypermetropic astigmatism, axis 90°, into the myopic form, axis 180°, by a tonicity of the ciliary muscle which, from long habit, becomes a fixed and, as it were, a normal condition, and which can often not be made to disappear even after a prolonged use of atropine.

But I believe that the accommodation, acting as a whole, may influence astigmatism in yet another way, and in a manner to which but little, if any, attention has been paid By a rapid alternate contraction and relaxation of the ciliary muscle, first one and then the other focal plane is brought on the retina, and thus, while all the lines of a test-letter, for example, are not seen distinctly at once, they are each seen clearly in such rapid succession as to enable the individual readily to distinguish the whole. This, however, can only happen when the ciliary muscle is very strong and the lens very plastic, as it is in early life. As soon as the lens begins to harden it loses its facility in thus rapidly responding to the accommodative impulse, and the corneal astigmatism, which was "latent," becomes manifest. And, in my judgment, many, if not a majority, of those cases of what were supposed to be partial contraction of the ciliary muscles in early life fall into this category.

There is still another form of lenticular astigmatism, the corollary of this, of which I have not seen mention made anywhere. My attention was called to it by my friend, Prof. Harkness, of the Naval Observatory, who takes a great interest in physiological optics as well as optics generally. He finds, he tells me, that since he has arrived at the age of fifty years, after using his accommodation in reading for some time, there is developed quite a perceptible amount of astigmatism for distance, revealing itself particularly in the appearance of distant points of light. He explains this, and, I think, correctly, by assuming that the lens, after the stress of accommodation has passed off, does not assume its normal spherical shape at once or equally, some sectors being less pliable than others and requiring a longer time to get into the normal form.

But lenticular astigmatism due to an oblique position of the lens, such as described by Young, is undoubtedly of more frequent occurrence than is generally supposed. The obliquity may be due to traumatism, as in the following case, which was recently under observation:

A boy of fifteen was struck in the left eye with a bean discharged from a bean-shooter. When first seen, some ten days after the accident, there were found two ruptures in the choroid downward and inward from the optic disk, and a dislocation of the lens upward and inward. The lower and outer edge of the lens was clearly visible through the pupil, which was very much dilated, as the result of the blow, and it showed striations of opacity extending from one to two millimetres toward the centre. The iris was tremulous at its upper inner portion. Skiascopy gave myopia of 5 D., axis 45° (meridian at 135°, corresponding approximately to the direction of the dislocation), and M. 1. D in the opposing meridian. In that eye V. $> \frac{5}{LX}$; with $= 0.75 \bigcirc - 3.5$ D. 45°, it came up to $\frac{5}{XVIII}$. The keratometer showed both corneæ to be spherical, each having a refraction of 44 D. in all meridians. The right eye was emmetropic. At the end of four months the conditions were essentially the same. In this instance there can be no doubt that the astigmatism was lenticular, and due to an oblique position of the lens, since a prolonged use of atropine failed to change the condition in any important degree.

But aside from these traumatic cases, there remains a category where the obliquity of the lens is evidently congenital. Moderate degrees of obliquity, such as to cause 0.5 D. of astigmatism, I believe to be rather common. We often find the corneal and total astigmatism to differ by that amount, even when we are sure that the accommodation does not come in as a factor. We generally find, also, that in such cases the general astigmatism is less than the corneal. We can readily understand this when we remember that, while corneal astigmatism is "according to the rule," the lenticular astigmatism is due to a rotation of the lens on its vertical axis producing an astigmatism "contrary to the rule," and, of course, neutralizing in its effects. A case which very fully illustrates this condition came under my observation only a few days ago.

A young man of twenty-four, had vision in L. $= \frac{5}{XVIII}$, in R. $= \frac{5}{V}$. Both corneæ were astigmatic, L. 1.25 D. 30°, R. 1.25 D. 20°—that is to say, the axes were both inclined to the right, and not both in or out, as we usually have it when the axes are oblique. No glasses improved vision in the right eye, but a cylinder of — 2. D. axis 125°, very much improved the vision in the left. Skiascopy and the ophthalmoscope gave essentially the same results. This was one of the cases where I considered a paralysis of accommodation necessary for a full and complete examination. As he was in government employ, and could not spend ten days in idleness under atropine, I ordered him hydrobromate of homatropine gr. j, water ʒj, a drop to be put in either eye every fifteen minutes for two hours. At the end of that time all voluntary accommodation was gone. With + 6 he could read No. 1 of Snellen at six inches, but not at seven or five inches. His distant vision in R. with + 0.5 was still $\frac{5}{V}$. In L. V. $= \frac{5}{XXIV}$, and with $+ 0.5 \bigcirc - 2.25$, 125° $= \frac{5}{IX} +$; skiascopy and ophthalmoscope corroborating. Here we have the same corneal astigmatism in both eyes, but while there is emmetropia in the one, in the other there is an astigmatism almost double that of the cornea in the other. I think that in this case we are justified in considering the accommodation entirely abolished, and the whole phenomena can be beautifully and consistently accounted for on the supposition of a rotation of the lenses symmetrically on their axes—at about 45° inward in both eyes (that is, 45° R., 135° L.). Such a position of the lenses would neutralize the corneal astigmatism of the right eye at 30°, and increase it in the

left at 125°. It is interesting to note, in this connection, that those congenital dislocations of the lens which are visible, are usually upward and inward.

In another case of a boy of fourteen, examined the same day, there was a corneal astigmatism, "according to the rule," of 1 D. in L. and 1.25 D. in R., but no corresponding demonstrable general astigmatism. V. $= \frac{5}{v}$; no glasses improving. Under atropine, thoroughly used, the only thing developed was a H. of 1 D., but no astigmatism whatever.

Such cases as these are by no means rare, while those of less degree are quite common in my experience, and but for the fact that our allotted time is already spent, many other illustrative examples could be offered. But I think I have already given sufficient to show you that there is a regular astigmatism of the lens which is of sufficient importance to be searched for, and that the lenticular astigmatism due to an oblique position of the lens is probably a more frequent factor in neutralizing corneal astigmatism than a partial contraction of the ciliary muscle.

ORIGINAL ARTICLES.

THE MINERAL SPRINGS OF COLORADO.[1]

BY CHARLES DENISON, M.D.,
OF DENVER, COLORADO.

AMONG the various natural advantages to be found within the borders of the Centennial State, few if any are more abundant and wonderful than the mineral, cold, and thermal springs. This richness is not astonishing to one who is conversant with the remarkable geology of this section. The ore "belts" and ore "shutes," showing different combinations of the precious or base metals; here the salines, there the sulphurets; or again the chlorides, carbonates, or chalybeates, predominating (and sometimes all of them existing together) are but indices of the processes which in the Rocky Mountains have produced a great variety of medicinal waters, through igneous, electrical, or other natural means.

The "carbonates" of Leadville, the sulphurets of the San Juan region or of Clear Creek County, or the chlorides of Custer County, show a marked similarity in their combinations to the neighboring mineral springs. It is claimed that the famous Bassick and Bull Domingo mines in the Wet Mountain valley are but the remains of tremendous thermal springs, where boulders were coated with metals and salts, and the surrounding rocks also became impregnated for considerable distances. And there are many miners who believe the great mother spring or volcano will yet be found which once threw up that large chloride deposit extending over miles in area near Silver Cliff.

[1] Read before the American Climatological Association, June 25, 1889.

The task of describing all the mineral waters of Colorado is impossible at this early stage of Colorado's development, as the data is yet too crude and incomplete. However, the chronicler of a few years hence will have a great advantage, when the complete analyses of Colorado mineral waters, authorized by the last State legislature, shall have been completed.

The writer takes pleasure in referring to Dr. Solly's published description of the "Manitou" mineral waters, and at the same time feels compelled to pass by the wonderful Pagosa, Ouray, Uncompaghre, Tomichi, Wagon Wheel Gap, Canon City, Poncha, Cottonwood, and the hot springs of Middle Park. He will confine himself to a description of four of the groups, chiefly in northern Colorado, which he has personally investigated, namely, Steamboat Springs, the Siloam and Glenwood Springs group, the Seltzer at Springdale, and the thermal waters at Idaho Springs; adding a description of the latter point as a representative mountain health station.

STEAMBOAT SPRINGS, *Routte County*.

One of the most wonderful collections of mineral springs in America is to be found in northwestern Colorado, west of the main range of the Rocky Mountains; along both banks of the Bear, or Indian Yampa River, and above the point where the Elk River joins it from the north.

The town is in its infancy, and the springs are named Steamboat, because of the likeness of one of them to the puffing of a steamboat, with its peculiar rumbling, swishing, and hissing noise. This spring, although cold, is so freighted with gases, that a regular spouting to the height of about three feet is caused through a hole ten inches in diameter in the solid rock.

The analysis of this spring is as follows:[1]

Carbonate of soda	75.24
Oxide of iron	a trace
Sulphate of potassa	8.39
Sulphate of lime	21.64
Sulphate of magnesia	11.76
Chloride of sodium	200.76
Evaporation by calcination.	2.74
Total	320.53
Gases { Sulphuretted hydrogen, Carbonic acid.	

The remarkable fertility of this neighborhood in variety of mineral waters, is instanced by the fact that within forty feet of this gas spring there are three flows of water which give different colored deposits on the grass and stones over which they flow.

There are forty or fifty springs in all, on either

[1] All the analyses are reduced to a like standard, namely, parts of mineral or solid substances in 100,000 of spring water.

side of a limestone and quartzite ridge, running northwest and southeast, the valley of the Bear at this point running east and west.

The springs are at present reached by stage, about 100 miles south from Rawlins, Wyoming, on the U. P. R. R.; 75 miles north from Russell, on the D. & R. G. R. R., and 85 miles northwest from Hot Sulphur Springs, in Middle Park, Colorado, which is 48 miles from Georgetown, on the Colorado Central R. R. The latter route, about 180 miles from Denver, has been the one usually chosen by tourists, but the Russell route just opened is shorter.

It is only a question of time, when some enterprising railroad corporation will extend the iron rails into this valley of the Bear River.[1]

The altitude of the springs is about 6500 feet above sea level, and it is somewhat colder than the same elevation on the eastern slope of the Rocky Mountains. The air is decidedly bracing and very dry, and invalids generally have been known to become robust and healthy by a more or less prolonged stay in this section. It should of course be noted here, that only those most fit for such a life of "roughing it" have thus far gone into the Bear River valley. The springs have been taken up by individuals and are included in the domain of the Steamboat Town Company.

Among the mineral springs, there is one of which it is especially delightful to drink. This is the *Iron Spring*. The water is cold and contains carbonic acid in excess, as well as the iron; so that, while drinking, it tastes much as does freshly-drawn Vichy, and one can imbibe more of it at one time than can be done with any other water of which the writer is acquainted. In 100,000 parts of the Iron Spring water are contained

Oxide of manganese	a trace
Carbonate of iron	38.40
Sulphate of potassa	11.15
Sulphate of soda	39.02
Sulphate of lime	71.86
Sulphate of magnesia	40.79
Chloride of sodium	104.20
Alumina	a trace
Evaporation by calcination	50.58
Organic matter	3.41
Total	359.41
Gases	Sulphuretted hydrogen, Carbonic acid.

Besides being one the best chalybeate waters known, this has been found especially efficacious in dyspepsia.

About half a mile from the main group of springs is the *Bath Spring*. This is a hot spring—temperature 103° F.—which bubbles up in a pool twelve feet in diameter. A bath in this spring is peculiarly delightful, probably in part because of some chemical combination on the surface of the bather's body, which is covered, while in the water, with minute white bubbles.

The analysis of this water is as follows:

Carbonate of lime	23.50
Sulphate of potassium	a trace
Sulphate of soda	9.55
Sulphate of magnesia	10.43
Alumina	a trace
Evaporation by calcination	4.36
Total	47.84
Gases	Phosphoric acid, Silicic acid.

There are two other hot springs in this vicinity, one of which, with a large flow of water, is situated about five miles north of Steamboat Springs proper, and has a temperature of 156° F. This water, and that of several other important members of the group, have not yet been analyzed.

There are two or three cold boiling springs, with large flows of water, decidedly sulphurous in nature.

Then there are various combinations of iron with sulphur. One spring boiling up in a pool thirty feet in diameter, is called the "Milk Spring" because the water is white as milk. This water has a sweetish, salty taste, and cattle seem to like to drink of it. There are two or three other springs which are probably also composed of magnesia either alone, or in combination with iron, is a principal constituent. One of the springs is decidedly saline, the water proving actively purgative if taken in sufficient quantities.

There are pools of mineral water not yet investigated and a cave formed by the deposit from mineral water. This excavation is so filled with gases, that one's lungs immediately become exhausted if he tries to remain there.

Besides all this there is plenty of good drinking water not mineralized; all of which goes to show that Steamboat Springs, because of its natural advantages, is destined to become a very attractive

[1] There are inducements sufficient in the coal, iron and grazing advantages, not to mention one of the most attractive—to the genuine sportsman—summer resorts in the United States; for here, according to the writer's experience, one can catch more trout in an hour, and find larger game in hunting, than in any other portion of Colorado. For instance, during a half day's hunt in "85" after a bear and elk, the latter of which he shot, he saw seventeen deer and three elk, in bunches numbering from one to three, just west of the Elk River. Of course, the numbers are gradually decreasing, but the region is peculiarly adapted to the grazing and haunts of game, as well as for hunting on horseback. The mountains are not abrupt as in the main range, but rise by easy graduations from the beds of the streams to a distance of from three to eight miles away. These hills and valleys in summer are covered with rich grass, which the fortunate possessors of the bottom lands use as pastures, while they cut hay from their ranches to tide over the two or three months of winter, with the deep snow which is characteristic of the upper half of the Bear River valley.

resort, for the tourist and invalid, especially in the summer time.

The analysis of the waters were made by Prof. E. J. Mallett, Jr., formerly of the School of Mines, at Golden, Colorado.

SILOAM SPRINGS, *Garfield County.*

These springs consist of five outflows along the banks of the Grand River, below where the Eagle River empties into that noble stream, and just west of the boundary line of Eagle County. The elevation is about 6000 feet above sea level and they are warm, or hot, being from 94 to 104 or more degrees Fahr., and contain a combination of salines very similar to the waters found at Saratoga.

According to Sir Henry Thompson, the heat intensifies the effect of the medicinal ingredients which such waters contain. This is undoubtedly the fact, for a single glass of this water taken hot is a purgative under ordinary circumstances. This does not appear to be otherwise explained according to the partial analysis of the Bath or Warm Sodium Spring, by Prof. Regis Chauvanet, of the Colorado State School of Mines, unless the effect mentloned be due to the sulphate of lime.

	Parts in 100,000.
Bicarbonate of lime	21.96
Bicarbonate of iron	1.99
Sulphate of lime	65.70
Chloride of sodium	948.42
Chloride of magnesium	21.78
Silica	.40
Total	1060.25

Or 616½ grains in a gallon.

A much larger flow of water has been developed since the above analysis was made—*i. e.*, in the Cave Spring, nearer the head of the Canon of the Grand, about half a mile further down the river than the warm Sodium Spring.

The tunnel or entrance to the cave is about five feet wide, and the flow of water which reaches across the bottom is six inches or more deep, the temperature being about 103° F. This cave is constantly full of warm steam, and the hot water pours from the porous rock by many openings, as in the caves at Glenwood Springs, sixteen miles further down the Grand River.[1]

There is, in other respects, much similarity between these outflows and those at Glenwood.

On the opposite side of the river from the Cave Spring, between an island and the main land, is "The Pool," which gives the town its name of Siloam, after the spring and pool made memorable in Bishop Heber's lines, "By cool Siloam's shady rill," etc. This pool is over one hundred feet in diameter, with mud banks formed largely of the chemical deposits from the large flow of hot mineral water which comes up in its centre. Neither the waters of the Pool, the Cave Springs, or of the Boiling Spring, farther down the river, have yet been analyzed, but they are heavily mineralized, and the latter especially is said to be agreeable though peculiar in taste, and to have a decided effect upon the action of the kidneys, as well as upon the bowels. Though the total flow from Siloam's five principal springs is less than that at Glenwood, yet it is approximated by a good judge to be over ten thousand gallons an hour.

The analysis already given shows a remarkable similarity to the Saratoga group, especially the Eureka, while the total constituents are like the Empire and Congress flows. As alterative, laxative, and diuretic waters, these alkaline saline springs are destined to take a prominent place among the medicinal springs of America. It is the intention of the promoters of the town to improve the springs by adding bathing establishments, and hopes are entertained of having a Sanitarium of considerable proportions built at this point. The Denver and Rio Grande Railroad is completed through the town, and some considerable work has already been done on the opposite side of the river, on the joint roadbed of the Burlington and Union Pacific railroads.

The beautiful valley, in the centre of which are the hot springs, and around which rise magnificent mountains, one above another, till a height of 10,000 to 14,000 feet above sea level is reached, affords many advantages for a health resort.

Among the natural attractions near by are the wonderful Canon of the Grand River, equal in grandeur and sublimity of views to any of Colorado's gorges, and the "Deep Creek" Canon, three miles northeast, crossed by the road leading to "Sweet Water Lake," twelve miles distant. This lake is a most charming body of clear water in which, as well as in all the streams mentioned in this article, are quantities of trout, which can be taken in large numbers by a good fisherman at the right season of the year.[1] Near this lake are some interesting caves.

About nine miles from Siloam to the north, and at an elevation of 9000 feet above sea level, is an area uncovered by snow in the coldest winter, where a cloud of steam exudes from the earth. This is supposed by some to be an escape of gas and steam from the source of the hot springs at Glenwood and Siloam.

In other ways this region about Siloam is wonderful and interesting, not to omit the utility of unlim-

[1] At the entrance to this cave a substantial bath house and across the river the first hotel of Siloam have just been completed.

[1] Around these places—*i. e.*, up in the mountains near "timber line"—a persevering hunter will undoubtedly be rewarded by coming across a deer or antelope, and occasionally a bear, though the chances are more than even that he will say he "has not lost any bear" should he meet a member of the bruin family.

ited amounts of gypsum, limestone, granite, marble, lumber, coal, and carbonate veins containing silver.

THE SELTZER SPRINGS.

These springs are situated at Springdale, Bou'der County, a small mining hamlet, ten miles from Boulder, the county seat, which is the nearest railroad point. There is a post-office and daily mail. Stage leaving Boulder at 1 P.M. daily, also reached by daily stage from Lyons, about the same distance away, on the line of the Denver, Utah & Pacific Railroad. The location is on James Creek, a clear mountain stream, surrounded by wooded mountains, and in the midst of picturesque scenery. Trails and foot-paths lead to the summit of lofty peaks in the vicinity, from which can be had grand views of the snowy range eight to ten miles distant. These points also command sweeping views of the plains to the north, south, and east, spread out like a vast ocean.

The subjoined analysis of the Seltzer Springs by Dr. Jackson, State Assayer of Massachusetts, indicates their value:

Bicarbonate of soda	9.37
Carbonate of lime	74.29
Bicarbonate of magnesia	1.14
Bicarbonate of iron	6.86
Sulphate of soda	184.46
Chloride of sodium	8.51
Silicate of soda	6.86
Iodide and bromide of sodium	2.23
Total	293.72

The formation of the springs is in solid granite. The water flows freely out of the crevices of the rock and is strongly impregnated with carbonic acid gas.

The springs are situated near the edge of the creek. The drinking-water, separate from the mineral spring, is pure and soft and is obtained from wells. The baths are used extensively, with excellent results, in chronic rheumatism, the water being heated artificially.

The climate differs only from the "valley," or plains, in the cooler nights in summer. The mean temperature is slightly below that of Denver—about 47° for the annual average. The attractions of the neighborhood are the mining camps and mines in the immediate vicinity, the walks and rides in all directions presenting varied and picturesque views, and the trout-fishing in the St. Vrain, a few miles distant.

The springs were discovered in the early history of the Territory, and the waters have been used by those living in the vicinity ever since.

There is a small but well-appointed hotel, and several cottages connected, where every convenience and comfort can be had at moderate prices.

The flow of water from the principal spring is about the capacity of a 1-inch pipe, with, say, 1 foot of pressure. The soil is light and gravelly, and there are no stagnant pools, as the swift-running creek supplies a channel for quickly draining off all refuse.

When the analysis is compared with those of the celebrated springs elsewhere (reduced to a uniform standard—*i. e.*, parts in 100,000 of water), its place is well established among such springs as Bethesda, Waukesha; Hot Springs, Arkansas; and Old Source, St. Moritz, Switzerland; Gastein, Austria; Seltzer, Saratoga. The Bethesda, with one-seventh as much salt—solid ingredients—as the Springdale water, must get its superior value, if it has any, from substances the analysis does not mention. We would be inclined to offer the same excuse for the waters of the Hot Springs, Arkansas, and the Gastein, in Austria, except for their silica, if it were not for their great heat, which being natural, is believed to be much more advantageous. The Springdale Seltzer analysis, as a measure of valuable chemicals, seems to be superior, especially in quantity, to all those named, which it decidedly resembles. But the closest analogy is to the waters of the Seltzer Springs, Saratoga, and the Old Source spring, at St. Moritz, Switzerland. The Springdale Seltzer, though weaker than the Saratoga Seltzer in salines, is stronger in iron, which is in the excellent form of the bicarbonate. It resembles the St. Moritz, Switzerland, except it has six times as much sulphate of soda. The additional alterative influence of the silicate of soda and of the iodide and bromide of sodium, which the Springdale water contains, would place it above both the other two mentioned. It is a decided tonic and alterative water. It is alkaline and slightly diuretic, effervescent and agreeable, and is indicated in dyspepsia chiefly, in convalescence from fevers and debilitating diseases, in chlorotic disorders and in anæmic states where iron is needed. The beneficial effects in case of diabetes and in other chronic diseases of the kidneys have been noted by the writer.

IDAHO SPRINGS.

Idaho Springs is one of Colorado's promising mountain towns. It owes its prosperity to the hot medicinal springs which are found there, and after which the town is named; to the climate and natural attractions of the locality, and to the gold and silver mines in the mountains near by. It is thirty-five miles distant from Denver and reached in two hours on the Colorado Central, a narrow-gauge branch of the Union Pacific Railroad, and its elevation above sea level is 7512 feet at the railway station. From the plains, two thousand feet below, up to this point, most of the Clear Creek canon, through which the railroad mounts to this elevation, is a closely shut-in

winding gorge whose precipitous sides furnish a variety of scenery; a constant and pleasurable wonder to one who first makes the journey. Near Idaho Springs, however, the canon widens out into a valley over a mile long, in the centre of which lies the town, a very pretty place as seen from the low hills on the south. It is a clean, well-arranged city of about two thousand inhabitants and five hundred houses, built along the north and south banks of a small stream—the South Clerk Creek.

To the north of the valley, which here runs east and west, the mountains rise more abruptly and higher—thus protecting the town from inclement north winds—while the less precipitous mountains to the south allow a desirable long continuance of sun exposure.

The three hotels of the town, together with a restaurant and several boarding-houses, have entertained an average of about five hundred strangers during the summer months, not to mention many tourist parties which have come up from Denver just for a day's trip. This fact, together with the record of about a thousand baths given at the bath establishment at the springs during the past summer, gives a good idea of the summer popularity of this resort. There is no reason why this record should not extend through the remainder of the year and be trebled during the summer time, when the contemplated improvements of the springs and baths, and suitably attractive hotel accommodations for invalids in winter, are completed.

Those who have the requisite vigor and endurance to accomplish the same, can plan walking, fishing and sight-seeing excursions, which, with the baths and improvised or occasional amusements in town, may help to while away a considerable sojourn in this delightful locality and bracing climate.

THE MINERAL SPRINGS.

The discovery of the *Hot Springs* at Idaho was made in a curious way. There is quite an area of ground near the mouth of Soda Creek where a well sunk ten or twenty feet will reach hot mineral water. In 1859, in the days of the gold excitement, a miner, James Jack, "struck" hot water in a prospect hole, which was afterward enlarged and used as a bathing pool by gulch miners, prospectors, and adventurers. Afterwards, other sources and other kinds of water were discovered near by, but the popularity which these springs have acquired for medicinal virtues are due chiefly to two of the flows, viz.: the warm iron and soda spring, which is called the "Drinking Spring," and the Bath Spring, which is principally used for bathing purposes.

Apart from the main group, and below where Soda Creek empties into Clear Creek, is a cold saline spring, which Dr. Brummond says he has often prescribed for constipation with excellent results, the patients taking two goblets of the water, which is quite palatable, before breakfast and in the evening. There has been no analysis of the water of this last-mentioned spring.

It is estimated that all the hot water flowing from the different sources in the main group, if conducted into a trough a foot wide, would make a stream a foot deep moving as fast as a man walks. This gives an idea of the abundance of the flow. There is evidently hot water enough were it properly collected; and could it be done, the writer suspects other varieties would be discovered. Much as at Steamboat Springs, Colorado, where there is a great variety of mineral water, there seems to be at Idaho Springs a change in the geological formation of the mountain—a vein or ledge breaking out, by means of which these hot currents reach the surface from nature's labyrinth deep down in the earth.

The largest of these flows is from "the Well," which has been sunk twenty-five feet below the surface, and out of which the water is pumped in summer for use in one of the three bathing-houses there. The temperature of this water is 110° F. Another large flow is from the Bath Spring, used at present in the lower and newest of the bath-houses. The analysis of this, made by Dr. I. G. Pohle, of New York, is given below. The temperature is from 103° to 110° F. as the water flows into the bath.

ANALYSIS.

Carbonate of soda	52.81
Carbonate of lime	16.32
Carbonate of magnesia	4.94
Carbonate of iron	7.07
Sulphate of soda	50 34
Sulphate of magnesia	32.09
Chloride of sodium	7.13
Silicate of soda	6 99
Total	177.69

Gas: Carbonic acid.

There is another source near by from which similar water is obtained, but of a higher temperature, 120° F.

Further up the gulch and to the left is the *Drinking Spring*, which is an alkaline chalybeate water of evident value. The deposit from the water, as it flows away from a pool beside a rock and becomes colder, looks like the bicarbonate of iron, which must exist in unusual proportion. The gas that bubbles up with the water is probably carbonic acid, and the temperature of this water is 85° to 90° F. This water is much used for drinking, and has acquired considerable reputation for the relief of dyspepsia and for its salutary action on the kidneys.

Further up the valley and to the left, still more wonderful phases of this mineral spring formation

remain to be described. These are the *Cave* and the *Tunnel Springs*. The former is a warm pool—temp. .100° F.—at the bottom of a considerable excavation in the rock which forms the mountain side. A little house is built close to the entrance of the cave, where the bather can gradually cool off after the bath.

The Tunnel Spring is more remarkable. Here is an excavation directly into the rock at the base of the mountain to the extent of fifty or sixty feet in length, and eight feet wide and high. Partitions are built across this tunnel at twenty and forty feet and at the entrance. In the inner room a bathing pool is constructed large enough for one or two persons. There is quite a large flow of water through this basin, and its temperature is 105° to 110° F. The inner room is filled with an atmosphere about as hot as the water, and also saturated with medicinal vapors. Under these peculiar conditions we have a good imitation of the old Russian bath. The relaxation and cutaneous perspiration possible in this natural steam-vault can be carried to any desired extent, and much caution is needed in again returning to the outside atmosphere. A cold plunge or shower-bath after such treatment would act as an excellent prevention of "taking cold," by closing the pores and fortifying the skin against the sudden change of temperature in coming out of the tunnel.

The opinions of the local physicians as to the curative virtues of the medicinal water should be valuable in this connection. Dr. P. Brummond, as already stated, has often prescribed the lower spring water for constipation. He has also found good results from the use of the "drinking," or iron-soda water, in dyspepsia and in kidney disease (gravel), and in cystitis. The "hot tunnel" baths he has prescribed in conjunction with the internal use of salicylic acid or iodide of potassium for rheumatism, and been much pleased with the effect. He has noted good results likewise from the use of the "bath" spring water for eczema, taken internally as well as used by bathing.

Dr. William B. Hawkins, another resident physician, has kindly furnished the following notes of three patients who have used the waters, and his evidence seems to agree with what we would expect to result from their judicious use in gouty and rheumatic affections:

CASE I.—Mr. A. D., a resident of this place, thirty-seven years of age, inclined to stoutness and possessed of a gouty disposition and heredity, came to me in March, 1888, suffering from the usual symptoms of lithiasis or latent gout. In addition to remedies addressed to his digestive disturbances, I advised the systematic use of the alkaline mineral water internally, in conjunction with frequent alkaline baths (natural hot spring water). All the symptoms were promptly relieved, and though he had been long subject to similar attacks, none have occurred now for nearly a year, the mineral water having been continued quite regularly.

CASE II.—Mr. G. M. B., of St. Louis, came here in June, 1888, suffering from sub-acute rheumatism in both ankle-joints, which rendered locomotion very difficult, painful, and almost impossible. After three or four weeks' use of the hot baths, and the mineral water internally, he returned home greatly improved, being able to walk without the slightest difficulty.

CASE III.—Mr. A. D. J. came here in July, 1888, from Nebraska, a great sufferer from chronic rheumatism, nearly every joint in his body being more or less affected. He "camped out" in the neighborhood of the springs, relying exclusively upon the internal and external use of the alkaline water, and after a residence of about two months went away almost entirely relieved of all his disabling and painful joint symptoms.

In addition to the above-described cases, there are many people at present residents here who enthusiastically ascribe their nearly complete immunity from the recurrent attacks of rheumatism, to which formerly they were subject, to the regular use of our alkaline water.

Mr. Montague, the present owner of the hot springs, has seen several cases of periodical gout relieved in those who have come up to take a course of baths and to drink the water. Of course, the absence from convivial scenes and from over-indulgence, together with the exceedingly bracing atmosphere, are valuable aids to the mineral water in the relief of these cases.

However, the statement as to the cure of gout emphasizes a marked correspondence between Pohle's analysis of the Bath Spring water and that of the "Sprudel," at Carlsbad, in Bohemia, the fame of which for use in gout and kindred affections has become world-wide. The only essential difference between these two flows appears to be that the Carlsbad is hotter (169.5° F.) and it has a stronger element of soda, while Idaho Springs has a very much greater proportion of iron. As compared with the Carlsbad, the Idaho Springs water is less saline and purgative, but more tonic. It is undoubtedly a very valuable alkaline, saline, alterative, and tonic water.

Like Carlsbad, these waters should, and undoubtedly will, gain a reputation for the relief of diabetes, and of gastric catarrh, either alone or associated with disease of the liver. Prof. von Niemeyer especially recommended the Carlsbad waters for gastric catarrh. The writer would recommend the use of the Idaho Springs water for a very common condition, hyperæmia or engorgement of the liver, whether it be active or passive, with the suggestion that should drinking the water not prove laxative enough then in addition a hot sour lemonade be taken on retiring at night or rising in the morning. This plan, with the proper diet and the climbing of hills during the daytime, would be very likely to bring a rebellious liver "to terms." If it did not, and the patient continued to have too constipated bowels, the addition of a teaspoonful of Glauber's salts to

the early morning draught might be efficacious. This last addition would make the water as strong or stronger than the Carlsbad.

Looking for other correspondences among the noted springs abroad, we see a marked similarity between the Idaho Springs water and the Marienbad, situated in Bohemia, twenty-two miles south of Carlsbad. This, however, is a cold spring and very purgative. Otherwise the correspondence between the Idaho and Marienbad is even more marked, because of their chalybeate qualities, than between Idaho and Carlsbad springs.

Of the Marienbad waters a distinguished authority on mineral waters has said, what has also been claimed for the Idaho Springs water, that beside an increase in the excretion of urine, "the secretions of the mucous membranes are increased and perspiration is more free. The appetite and digestion usually improve under their use, and, owing to the presence of carbonic acid and iron, the prolonged use of the water does not prove as debilitating as otherwise would be anticipated."[1]

In the chalybeate qualities there are still more remarkable correspondences between the Idaho and the celebrated St. Moritz Springs in Switzerland.

The writer, when visiting the Maloya Valley, Switzerland, in the summer of '88, was surprised at the reputation the St. Moritz flow had acquired, considering the remarkable simplicity of the analysis (total ingredients, ten grains to the pint—*i. e.*, aside from the carbonate of iron contained). These springs have become the attractive centre of large hotels, where thousands yearly linger to drink the tonic waters. Maybe an American should not allow his wonder to be too demonstrative, because the Arkansas Hot Springs, with one-tenth as much mineral ingredients, has become quite as celebrated, and even the pure water of Waukesha has a continental reputation.

However, the St. Moritz is one of the best of Dr. Walton's group of foreign chalybeate waters—the Schwalbach and Pyrmont, in Germany, the Spa in Belgium, and the St. Moritz, in Switzerland. Nevertheless, the Idaho Springs contain three times as much carbonate of iron, and nearly three times as much carbonate and sulphate of soda as the St. Moritz flow, which latter has also the disadvantage of being a cold spring (49° F.).

The use, therefore, of the "Drinking Spring" water at Idaho Springs for anæmic conditions, chlorosis and convalescence from diseases attended with impoverished blood states, will naturally be suggested to every medical mind.

It will not be difficult for a physician to select a typical case that would be benefited by drinking this spring water, especially in such a bracing climate a mile and a third above sea level. In the opinion of the writer, a typical case would be a chlorotic young woman—probably with constipation and amenorrhœa, deficient muscular tone and lung capacity, feeble assimilation and languid nerves, with or without some gastric catarrh. How often the busy practitioner sees such a case, and wishes the needed iron could be so combined as to relieve and not increase the accompanying constipation. In the Idaho Springs iron water nature has accomplished the desired combination in the sulphate of soda present. The surrounding conditions are also best calculated to give renewed circulation of blood and vigor of muscle.

This water is chalybeate without being constipating; laxative without being depressing; alkaline, yet with an excess of carbonic acid; hot, yet agreeable to the taste.

In the drinking spring is almost an exact imitation of the celebrated Apollinaris Water, with the carbonate of iron, the silicate of soda, and a little sulphate of magnesia added. It can be taken with greater impunity than many simpler waters, because of its peculiar combination, the main effect to guard against being a tendency to congestion of the head from the excessive amount of iron.

If acid dyspepsia, with chronic catarrh of the stomach, is not relieved by its internal use, the addition of a little common salt to that which is drunk after meals may be serviceable.

As a bath the use of the hottest spring water can be recommended for chronic rheumatic swellings, the swelling or stiffness of joints, plethoric or impure blood conditions, especially if associated with any eczemas or chronic skin diseases. Besides in certain chronic diseases peculiar to women, the local use of the hot water at the bath would be invaluable—such as for leucorrhœa, subinvolution, or chronic uterine inflammations.

(To be concluded.)

[1] The Mineral Springs of the United States and Canada, etc. By George E. Walton, M.D. D. Appleton & Co., N. Y.

TWO RARE TUMORS OF THE BREAST.

I. Carcinoma in the Male Breast. II. Abscess simulating Carcinoma in the Female Breast.

By DUDLEY P. ALLEN, M.D.,
VISITING SURGEON TO LAKESIDE AND CHARITY HOSPITALS; CONSULTING SURGEON TO ST. ALEXIS HOSPITAL, OF CLEVELAND, OHIO.

Two rare cases of diseased mammæ have recently come under my attention.

Case I. was a carcinoma in the breast of a man, fifty years of age, with good family and personal history. No case of cancer had ever occurred in his family within his knowledge. I saw the man in February, 1889. About one year previously, while bathing, he had scratched his right breast. He put on a red flannel shirt, which caused much smarting

that night. This was the first time he noticed any trouble with the breast. For three months various salves were applied, and later a wash of carbolic acid was used. First the nipple became ulcerated, and the process has gradually extended until there is now a phagedenic ulcer four inches transversely by two and a half inches vertically, invading the region of the right breast. Scattered about the periphery of the ulcerating surface are nodules the size of a small pea and larger, appearing as hard masses on palpation, and many of them covered by reddish integument. This deposit of nodules also forms a line crossing the thorax from the right to the left mamma. The left mamma is enlarged, indurated, and discolored, but not ulcerated. It measures one inch vertically by two and a half inches transversely. The left nipple is retracted, as in a scirrhus. The glands of the left axilla are enlarged, one being the size of a hickory nut. From the ulcerating surface on the right side a line of induration extends under the border of the pectoralis major to the right axilla. By consent of the patient a small piece of tissue was removed from the indurated border of the ulcerating surface. It presented, under the microscope, the most typical appearance of carcinoma.

CASE II. was a chronic abscess of the breast simulating a carcinoma. Mrs. S., æt. forty-three years, has borne ten children. The first eight children had nursed both breasts.

At the birth of the ninth child the right breast gave a little trouble, and the nipple retracted so child could not nurse it. The tenth child, at the time of operating on this case (February 4, 1889), was about two years old, and had nursed on the left breast *twenty-two months*. No attempt had been made to nurse the right breast, since the retracted nipple rendered it impossible. The right breast secreted some milk, however, as was shown by its escaping from the right nipple while the left was being nursed.

In September, 1888, a lump was noticed in the right breast. There were occasional shooting pains in it, but they were infrequent, and there were none of the ordinary signs of any inflammatory disturbance. The increase in size was very gradual. When I saw the case in February, 1889, in company with Dr. A. J. Cook, I could feel in the right breast a tumor about the size of a large hen's egg, situated to the right of the nipple. The nipple was markedly retracted. The mass was dense; there was no redness of the integument, nor tenderness on firm pressure. I had been called to operate upon the case as one of "scirrhus" of the breast, and the appearance seeemed typical of this disease.

Upon carrying my first incision into the mass there escaped several ounces of thick, laudable pus, much to the surprise of all who witnessed the operation. Fortunately, the breast was not damaged by the incision.

Were I to see a similar case, I know of no means of examination which would distinguish it from a carcinoma of the breast with retracting nipple, save an exploratory incision. The fact that the retraction of the nipple occurred so early in the history of the case (viz., while nursing the child before the last) was doubtless not given sufficient weight. This fact was not elicited, however, until after the incision was made.

A CASE OF RATTLESNAKE BITE, SEEN TEN MINUTES AFTER THE ACCIDENT—RECOVERY.

BY W. M. MEMMINGER, M.D.,
OF CHARLESTON, S. C.

As it is not usual for a physician to see a case of this kind so soon after the infliction of the wound, and as the result of my treatment was so satisfactory, I take this opportunity of presenting the case to my colleagues in the profession.

The patient was a colored laborer of about thirty years of age. While engaged in cleaning some brushes away he was struck in the forefinger of the right hand, the fang of the snake entering the side of the finger, at about the middle of the last phalanx. Seeing that it was a rattlesnake which had bitten him he gave a cry for help, and ran toward some of his fellow-laborers, a distance of about fifty yards. By the time he had reached them he fell, in an unconscious condition. One of the men had the presence of mind to put a ligature tightly around the wounded man's arm, above the elbow, and a half pint of whiskey was poured down his throat; he was then brought immediately to my office—the whole time, as well as I can judge, not being ten minutes before he was presented to me.

The arm, by this time, was enormously swollen; whether from the ligature or from the poison, I do not know, but I think from the poison. The patient was completely unconscious; pulse, thirty to the minute; respiration slow; extremities cold; and involuntary evacuation of the bowels. To all appearances there was no hope, and I must say I was somewhat at a loss to know what to do. I made a free incision, down to the bone, through the wound, cutting both vein and artery of the finger; I then applied Esmarch's tourniquet, just below the shoulder. After having applied this, thinking that perhaps it might be well to try to drive as much blood out of the arm as possible, I applied Esmarch's elastic bandage, beginning from below the tourniquet and descending; this seemed to act well and bled the arm very thoroughly.

There are certain facts just here which I think are worthy of mention. The tissues through which I cut were almost black in color, and the blood extracted from this arm failed to coagulate. In all he bled about a quart. I also resorted to a method which I have seen recommended—that is, of injecting into some of the larger veins a solution of ammonia in water 1–3 : 20 minims every half hour; this I injected into the median basilic, twice during the first hour and afterward one after each collapse. The next theory I carried out was giving the patient the poison gradually.

In about an hour's time after he was brought in to me he had recovered almost entirely—so much so

that he was able to sit up and talk with his friends. I now tried the process of giving him the poison. I loosened the tourniquet; no sooner had I done this than he fell into an unconscious condition and apparently in as dangerous a state as before. The tourniquet was loosened for, I suppose, not more than three beats of the heart. This alarming and dangerous condition was caused, I presume from the effects of the poison, the effects of the whisky having worn off several times during the day, the man being perfectly sober in the intervals between the periods of collapses, produced by the slackening of the tourniquet. This process I repeated six times within seven hours, the patient rallying each time within an hour. At the end of the seventh hour the tourniquet was removed entirely, the wound dressed with boracic acid and the man removed to his quarters, partially delirious.

He was bitten on Saturday morning, and on Monday morning he walked to my office to have his finger dressed. The hand had a somewhat erysipelatous appearance and pained him considerably, but in no other way did he feel any bad effects.

Erysipelas did not set in, and in a few days he had completely recovered. The snake was killed a few minutes after the accident and proved to be a rattlesnake about two and one-half feet long.

HOSPITAL NOTES.

JEFFERSON MEDICAL COLLEGE.

SERVICE OF J. M. DA COSTA, M.D.

(Reported by E. P. HERSHEY, M.D., Clinical Assistant.)

HYSTERIA WITH PECULIAR SYMPTOMS.

November 22. K. J., æt. seventeen. Three years ago, antedating the beginning of menstruation, began to have peculiar seizures, supposed to be epileptiform. While standing she would suddenly become rigid, fall to the floor, and then have convulsive movements. One year ago, the case was treated as one of epilepsy, and under the bromides the attacks ceased. Four weeks ago she went into a state of seeming unconsciousness, lasting nearly two weeks. To all appearances she was unconscious of her surroundings; at times she became excited, and would make efforts to jump out of the window. She has at no time either bitten her tongue or fallen so as to injure herself. During the past two weeks the nature of the attacks has changed. Perfectly rational, she suddenly stares vacantly into space, the muscles of the face immovable, lips slightly parted, pupils dilated. The face has not lost its color. In a few minutes the head rotates to the left, followed almost instantly by the trunk; convulsive movements of the left hand then occur, followed by relaxation of all the muscles, the eyes close, and the head drops forward. All attempts to arouse her fail. Remaining in this condition for nearly five minutes, her eyes open and become fixed, the head slightly raised, the face assuming a peculiar look of pleasure—a condition of ecstasy. This gives way to an apparent faint, when she soon begins to mutter, at times humming, at others she remonstrates with those about her; she then attempts to escape, but being detained becomes rigid, but does not fall. The attitude assumed is one that makes those about her think she will lose her equilibrium, but she remains rigid. At times she recognizes those about her during the attacks, and almost in an instant she does not recognize her mother; when asked questions there is usually a meaningless smile upon her face, and she talks incoherently.

When the eyes are fixed, the reflexes are normal, and though the pupils are widely dilated they quickly contract when a bright light is brought before them.

Her menses are regular, though scanty. Has some pain during her sickness, but the attacks are not influenced at this period. There is slight tenderness along the lumbar vertebra. Pressure over the ovaries does not influence the attack, nor is there pain in this region. She states that she often has pain commencing in the lumbar vertebræ, going up the spine, and then to the left and right sides of the head. She has always been very emotional, is easily affected, and readily laughs and cries.

In this case there are three possibilities: Hysteria, epilepsy, and hystero-epilepsy. That it is a case of hysteria would appear from the fact that notwithstanding there were convulsions in the early history of the case, she has never had a spell while alone, and has never bitten the tongue. Were it a case of epilepsy, these striking negative results would be absent; and, too, in epilepsy the pupils are very slightly influenced by light, here they act normally. The whole *morale* of this girl shows the case to be one of hysteria rather than one of epilepsy. She is a healthy-looking girl, and has an elegant color. A case, therefore, of neurosis, the symptoms of which make it a curious one.

Treatment: ℞. Zinc. valerinat. gr. ij, four times a day. At night: ℞. Chloral hydrat. gr. x; sodii bromid. gr. xx.

Keep her quiet. See that she lies down three or four times a day. A diet largely of milk, nourishing, and not stimulating. In order to free the menstrual flow:

℞.—Globules of apiol āā gr. v.

Using six in the twenty-four hours before the time and during her sickness, at which time suspend the valerianate of zinc.

Two weeks later the patient was again presented before the clinic. The results of the treatment were striking. Her menses were no longer scant. No seizures from the time she was put under treatment. The question arose as to whether or not the treatment should be continued. In view of the marked improvement it was found advisable to continue it.

One month later the treatment was discontinued, but in a few days the patient stated that she had occasional feelings of approaching attacks, which soon wore off. Up to the present time April 1, 1889, she has had but four seizures, the last being March 15th. The valerianate of zinc is still continued.

MEDICAL PROGRESS.

Albumin in the Normal Urine.—In the discussion on the prognosis of albuminuria, at the last annual meeting of the British Medical Association, reported in the *British Medical Journal* of August 24th, DR. GEORGE JOHNSON said that from the results of numerous and careful obser-

vations, he was convinced that no albumin existed in normal urine—in other words, that albuminuria was always pathological. The most delicate and entirely trustworthy test for minute quantities of albumin is a saturated solution of picric acid, with the subsequent application of heat. Any opalescence resulting from the addition of picric acid, which is increased and not dissolved by heat, is certainly albumin, except in the very rare case of an immediate separation of uric acid in sufficient amount to render the mixture cloudy. In such cases the crystals of uric acid may be seen with the microscope. Picric acid causes no opalescence in normal urine. It does not precipitate mucin, as has sometimes been asserted; but when combined with acetic or citric acid, the mucin which is precipitated by either of these acids is rendered more conspicuous by the yellow picric acid.

The test for albumin which in delicacy comes nearest to picric acid is nitric acid at the bottom of a column of cold urine. Those practitioners who boil the urine before adding nitric acid must often fail to detect a trace of albumin which might readily be detected by nitric acid in the cold urine. A slight trace of albumin is apt to be decomposed by the addition of nitric acid to the boiling urine.

A comparison of the nitric acid and picric acid tests may most satisfactorily be made by gradually diluting a specimen of albuminous urine. At a certain stage of diluting it will be found that while picric acid gives an instantaneous opalescence, the nitric acid test forms an opalescence at the junction of the two liquids only after some minutes. Then, in urine yet further diluted, the picric acid, with the subsequent application of heat, gives a decided indication of albumin which the most careful testing with nitric acid fails to show.

He had so often compared these two tests that he can now tell at once whether a trace of albumin, which is clearly shown by picric acid, is so small that nitric acid either fails to indicate it or it does so only doubtfully after the mixed liquids have been allowed to stand for some minutes.

Another important use of picric acid is in estimating the amount of albumin by Esbach's simple but accurate quantitative process. Again, picric acid is a more delicate and trustworthy test for peptones than Fehling's solution, the precipitated peptones being redissolved by heat below the boiling-point. It is often stated that peptonuria is of common occurrence. As to this, he said that in carefully testing many hundred specimens of urine he had never met with peptones, except in small quantity, associated with an abundance of albumin.

The separation of peptones from albumin is easily effected by passing the boiling mixture of urine and picric acid through a previously warmed filter. The coagulated albumin remains on the filter while the dissolved peptones pass through and are precipitated on cooling.

Once more, the picric acid and potash test for glucose, while it is equal to any other for accuracy of result, surpasses all others by its readiness of application and facility of working. One especial advantage over the copper test is that the presence of albumin in no wise interferes with the action of the picric acid and potash quantitative test for sugar. In several instances he had known the reducing action of uric acid and urates upon Fehling's solution mistaken for an indication of glucose.

The Prognosis of Albuminuria.—DR. JOHNSON, after discussing at length the opinion of various writers upon the subject of the prognosis of albuminuria, draws the following conclusions:

1. The presence of albumin in the urine, though small in amount and occasionally intermittent, is always pathological.

2. The practice of testing the urine in all cases of ailments, even the most trivial—the importance of which I have for many years past insisted upon—has led to the detection of albuminuria in many youths and adolescents, who are especially liable to be exposed to the commonest of its exciting causes, namely, cold and wet and over-fatigue, and who have not lived long enough for the ultimate evil results of a neglected albuminuria to have become developed.

3. The albuminuria, whether intermittent or persistent, of persons apparently in good health has no such special features as to require it to be designated by such misleading terms as "physiological," "functional," "cyclical," and "the albuminuria of adolescents." The last term is especially inappropriate, since the condition is of most common occurrence in both sexes and at all periods of life, from childhood to extreme old age.

4. In almost every instance these cases of albuminuria may, by a careful inquiry, be traced back to some recognized exciting cause.

5. Nearly all cases of acute nephritis pass through the stage of intermittent albuminuria in their progress toward convalescence; and, on the other hand, the majority of cases of intermittent albuminuria may be traced back to a more or less remote attack of acute nephritis.

6. While, on the other hand, intermittent albuminuria—even though it may have existed for years—may be looked upon as a curable condition if only its exciting causes can be ascertained, avoided, and counteracted by suitable dietetic, medicinal, and hygienic means; on the other hand, the neglect of such means may convert an intermittent into a persistent albuminuria; and a persistent albuminuria, although for many years it may be unattended by symptoms of disordered health, ultimately results in a fatal degeneration of the kidneys.

7. Since it is notorious that albumin, even to a very large amount, may exist in the urine of persons who are apparently in perfect health, it is obvious that the urine of every patient, no matter how apparently trivial his ailment, and the urine of every applicant for life assurance, no matter how robust his appearance, should be tested for albumin.

8. For many years past the fact that albumin may be abundantly present at one period of the twenty-four hours, and entirely absent at another has been publicly demonstrated, and ought to be generally known. It is, therefore, necessary to test the urine, not only after rest in bed and before breakfast, but also after food and exercise.—*British Medical Journal*, Aug. 24, 1889.

Treatment of Burns with Iodoform.—DR. SCHIFF, of Vienna, speaks most highly of Dr. Mosetig's method of treating burns with iodoform. Apart from iodoform quickly easing the pain of the burn, it also effects rapid

healing. The blisters should be removed and the wound washed lightly with a tampon of cotton dipped in a 0.5 per cent. solution of salt and water, then several layers of iodoform gauze should be laid on the wound, upon this a piece of rubber, then cotton, and the whole secured with a roller bandage. If the discharge soils the bandage, it and the cotton may be changed, but the iodoform gauze should not be removed until the end of the first week. For burns of the face, Mosetig recommends a salve of iodoform (one to twenty). The face should also be covered with a mask of gutta-percha. Schiff has treated 109 cases of burns in this way; the majority healed quickly; many of them were both severe and extensive. No toxic symptoms were observed.—*Wiener med. Presse*, August 18, 1889.

Antipyrin in Menstrual Colic.—Antipyrin has, of late, been given in cases of uterine colic and cramps, occurring during menstruation, with excellent results. The drug is administered in the form of a clysma in a single thirty-grain dose. The sedative action is observed in about half an hour; in some cases a repetition of the dose is called for in twelve hours. DR. WINDELSCHMIDT has used this treatment in a number of cases, and always with satisfactory results. Usually a slight hypnotic action seemed to be also exerted by the drug. Other unpleasant accompanying symptoms, aside from sweating and slight ischuria, were not observed.—*Münchener med. Wochenschrift*, August 20, 1889.

Suppositories for Endometritis.—TERRIER, in the *Revue Thèr. Méd.-Chirurg.*, August 1:

℞.—Powdered iodoform . . . ʒijss.
Tragacanth . . . . . grs. viij.
Glycerine } . . . . . q. s.—M.
Distilled water }
For ten suppositories.

These suppositories should be made in the form of crayons, about the size of a nitrate of silver point, such as is used for cauterizing. Resorcin or salol may be used in place of iodoform in the formula, the same quantity being admissible. If, however, bichloride is preferred, the formula should be altered as follows:

℞.—Sublimate of mercury . . . grs. viij.
Powdered chalk . . . . ʒvjss.
Tragacanth . . . . . grs. xxiv.
Glycerine } . . . . . q. s.—M.
Water }
For 50 suppositories.

These suppositories should be placed in the cavity of the uterus after the vagina has been thoroughly washed and disinfected with sublimate solution. A tampon of iodoform gauze may be placed in the vagina.

Treatment of Retention of Urine from Prostatic Enlargement.—In the Medical Section of the last meeting of the British Medical Association, reported in the *British Medical Journal* of August 24th, MR. A. F. MCGILL opened a discussion upon the treatment of retention of urine from prostatic enlargement. He advocated the following propositions—(1) That prostatic enlargements which give rise to urinary symptoms are intra-vesical, and not rectal. (2) That retention is caused by a valve-like action of the intra-vesical prostate, the urethral orifice being closed more or less completely by the contraction of the bladder on its contents. (3) That in many cases self-catheterization is the only treatment required. (4) That when the catheter treatment fails, or is unavailable, more radical measures are necessary. (5) That this treatment, to be effectual, should (*a*) for a time thoroughly drain the bladder, and (*β*) permanently remove the cause of the obstruction. (6) That these two indications are best fulfilled by a supra-pubic rather than by a urethral or perineal operation. The supra-pubic operation is preferable (*a*) because it is more generally applicable, (*b*) because it can be performed with greater precision and completed with greater certainty, (*c*) because it insures complete and most efficient drainage, (*d*) because it is equally safe. Of ten patients upon whom the speaker had operated eight had continued well, only one having required the passage of a catheter, and that only after excessive drinking. In one case, owing to the extreme hardness of the prostate, the operation was unsatisfactorily completed; in another there was temporary relief, with death at the end of ten months.

MR. EDWARD ATKINSON said he had performed supra-pubic prostatectomy in five cases. Of these, one had died, and the remaining four were well—had good control over the bladder, did not require to micturate more than six to ten times in the twenty-four hours, and were enjoying fair comfort.

MR. REGINALD HARRISON referred briefly to some cases of advanced prostatic obstruction which he had treated by perineal prostatotomy, which he thought was specially applicable to those instances where obstruction was the prominent and most distressing symptom. He concluded his observations by a reference to the importance of the early treatment of prostatic enlargement by mechanical means.

MR. BRUCE CLARKE stated that the obstruction was due mainly to two causes: (1) the growth of the prostate into the urethra, and (2) into the bladder; and both of these must be relieved. He had had eleven prostatic cases under his care, in which some form of operation was required. So far his plan of treatment had been to make a perineal incision first, and examine the bladder; if necessary, incise the floor of the prostate; then one could ascertain exactly what needed to be done, and perform a suprapubic operation afterward, if necessary. He had done this in two cases with the best results.

DR. WARD COUSINS said he had performed two operations for prostatic retention and calculus. Both cases were old men laboring under intense suffering. He enucleated some masses around the neck of the bladder, which proved to be cancerous. Both cases were for a time relieved. He though Mr. McGill's operation would be the method practised in the future for cases in which catheterization was impossible from pain and mechanical difficulty. The essential treatment consisted in the timely use of the catheter.

MR. MACEWEN wished to say that after hearing Mr. McGill's paper, seeing his patients in the Leeds Infirmary and the specimens, he had upon this evidence become a convert to the suprapubic removal of the prostate, as it removed the pathological cause of the difficulty; and he would put the operation in practice on the earliest suitable opportunity.

MR. BENNETT MAY agreed that it is the intra-vesical growth which causes the obstruction and retention, and further, when retention is complete and permanent, that it is collar enlargement; with partial retention, but great irritability, a pedunculated middle lobe. He believed that for drainage the suprapubic is inferior to perineal cystotomy, but he regarded formal removal of any portion of the prostate by the perineal route as an impracticable proceeding in most cases. He thought Mr. McGill's operation should be done before the patient is much exhausted. In such cases median perineal drainage might be the more prudent course.

Mr. Jordan Lloyd, Professor Trendelenberg, and others also spoke, after which Mr. McGill replied.

Anthrarobin.—Anthrarobin, a drug which not long ago was looked upon with much favor by dermatologists, is fast losing its initial reputation. At the last meeting of the dermatologists in Berlin, reported in the *Deutsche medicinische Wochenschrift* of August 22d, DR. O. ROSENTHAL brought the subject of the utility of the drug up for discussion. Its condemnation was almost unanimous. True, it does exert a beneficial action in psoriasis, pityriasis, and herpes, but this action is so slight and so very slow that it is usually lost sight of. Then, again, the accompanying symptoms produced by the drug are far from pleasant, especially from a cosmetic point of view, as by its use the nails of the patient assume a violet color, and the hair takes a strikingly red hue. The patient's linen will also be ornamented with deep violet stains.

DR. BEHREND, in the discussion, stood up for the drug, and said its action entirely depended upon the manner in which it was used. Its action is much intensified when used in conjunction with soap. Anthrarobin is tolerated in many cases where chrysarobin is not. Again, anthrarobin never produces dermatitis or conjunctivitis, as in many instances chrysarobin does.

DR. KÖBNER had used anthrarobin in many cases of skin diseases, also in twenty-five cases of psoriasis. His results were far from satisfactory. He considers that the drug can in no way compete with either chrysarobin or pyrogallic acid. In psoriasis its beneficial action was only noticeable when combined with soap, and in all cases the scales had to be removed mechanically. In a few cases of superficial mycosis tonsurans the drug produced tolerably rapid healing, but its use frequently occasioned a burning sensation which lasted for some time, and in one case it even caused exfoliation of the skin. The stains on linen produced by it cannot be removed by even washing with soda, soap, and water.

Treatment of Chronic Catarrh of the Bladder.—DR. L. FREY, in the *Centralbl. für Chirurg.* of August 17th, claims that iodoform is especially suited for the treatment of chronic catarrh of the bladder, on account of its antiseptic, analgesic, and deodorizing properties.

The bladder should first be cleansed by a douche of warm water, and then a tablespoonful of the following, in a pint of warm water, should be injected into it.

R.—Iodoform	50 parts.
Glycerine	40 "
Distilled water	10 "
Tragacanth	¼ part.—M.

These injections should be repeated every third day. Three or four will usually effect a complete cure.

Dr. Mosetig-Moorhof has treated twenty-three cases in this way, all of which were cured. No symptoms of intoxication from the drug were observed.

Arrack in Diphtheria.—DR. ROUGE, in the *Deutsche med. Wochenschr.*, No. 29, strongly advocates the use of arrack in diphtheria. The local treatment consists merely in washing the mouth with lime-water. The dose of the liquor varies from a half-teaspoonful to one tablespoonful every two hours, according to the age of the patient. Dr. Rouge's intention is always to give a sufficient quantity so that a slight intoxication will be observable at the end of each day. Fever does not contraindicate the use of the liquor. Rouge reports forty successful cases treated in this manner. The duration of the disease was also considerably shortened, being on an average only eight days.

Phosphorus in the Treatment of Rickets.—The use of phosphorus in rickets, so much vaunted by Kassowitz and others a couple of years ago, has not, we believe, found much favor in this country. A very extensive trial of the remedy has recently been concluded by DR. L. B. MANDELSTAM, of Kazan, who publishes the results in *Vratch*. These experiments extended over a period of nearly three years, and the number of patients upon whom the phosphorus was tried was 450, their ages running from three months to four years. Of this number, however, 234 were excluded from the statistics, either because they did not take the phosphorus long enough, or in the proper way, or because the disease in them was not sufficiently pronounced to make the experiment a satisfactory one.

Of the remaining 216 children, 120 were cured, 43 were markedly benefited, in 30 no improvement was noted, and in the remaining 23 the treatment was discontinued on account of some intercurrent disease. The remedy was given dissolved in cod-liver oil, in the proportion of one part to ten thousand of oil, of which a teaspoonful was given once or twice a day. When it was not deemed advisable to give cod-liver oil, the remedy was administered, after the formula of Kassowitz, in a mixture composed of $\frac{1}{100}$th part of phosphorus, 15 parts each of gum arabic and sugar, 30 parts of almond oil, and 40 parts of distilled water. Dose, a teaspoonful once or twice a day. No other remedy was employed, except when diarrhœa was present, and then an attempt was made to cure this before giving the phosphorus.

The following are the conclusions which the author feels himself justified in formulating as a result of these experiments:

1. Clinical observation justifies fully the employment of phosphorus in rickets.

2. Phosphorus acts better, more quickly, and with greater certainty than any other remedies.

3. This drug, when given in small doses, even for long periods of time, is well borne by children, and causes in them no unpleasant effects.

4. Phosphorus is especially efficacious in controlling the nervous manifestations of rickets.

5. Periodical measurements and weighing of the children, as well as observation of the osseous structures, show that the disease is actually arrested in its course

and cured, in the great majority of cases, under the influence of phosphorus.

Another trial of the same remedy was made by Dr. Shabanova, whose report is also printed in *Vratch*. She treated 105 patients, and obtained perfectly satisfactory results in 77. In 22 an improvement was noted, and in 6 cases there was an aggravation of the disease while the treatment was being continued. The first effects of the remedy were seen in an improvement in the nervous symptoms, and later, in favorable cases, a change for the better was seen in the general health, and in the condition of the bones and muscles.—*Medical Record*, August 31, 1889.

Treatment of Dilatation of the Stomach.—The following method of treatment for chronic dilatation of the stomach is advocated by DR. KLEMPERER: The stomach should daily be washed with a small quantity of water, and a most careful diet enforced. As the stomach absorbs little or nothing while in this condition, it is necessary to give food which can easily be absorbed by the intestines. Hydrocarbons in the form of sugar of grapes, and fats in the form of cream, are especially valuable. Bread and butter may also be allowed. This hygienic treatment should be augmented by electricity and massage of the stomach.—*Revue de Thér. Méd.-Chirurg.*, August 1, 1889.

Dressing for the Umbilical Cord.—DR. CULLINGWORTH writes to the *British Medical Record* of August 24th that he has found starch powder to be the best dressing for the cord before its separation. It is far superior even to finely powdered boric acid; for while with the former dressing the cord will fall off in four or five days, with the latter it will frequently not do so for eight days.

Scraping out of Soft Chancres.—DR. OSCAR V. PETERSON, in *Vratch*, says that, in the course of the last eighteen months, he has treated 120 cases of soft chancre by means of scraping out after the following rules: Having cleansed the ulcer and surrounding skin with a corrosive sublimate or carbolic solution, he wipes the parts with a piece of cotton-wool soaked in ether, and then treats the chancroid ulcer with a sharp spoon, exactly in the same way as if it were a lupoid or an ordinary atonic one. The procedure over, he dresses the raw surface with iodoform powder and gauze. To make the operation painless, he previously injects under the skin a two-per cent. solution of hydrochlorate of cocaine. In eight or ten minutes anæsthesia is complete. In simple cases the ulcer cicatrizes, on an average, in 9.9 days. In 6 out of 120 cases healing was complete in three days, and in 25 in five days. In anæmic or alcoholic patients, however, cicatrization is not complete before the twenty-second or even the twenty-fifth day.

The author adds that, in 2,953 cases of soft chancre admitted during the period 1881–'87, the average stay in the hospital amounted to 27.5 days. In 1888, however, when the new method was resorted to, the average figure did not surpass 20.7. The percentage of complicated cases varied in the former category between 50.5 and 70.3, in the latter was equal to 62.1.

As to other methods of treating soft chancres, Dr. Peterson eulogizes painting with pure tincture of iodine, which is said to give best results in small-sized ulcers of recent origin, but sometimes causes local irritation; and excision of the ulcer and adjacent skin, with subsequent application of sutures. The wound heals per primam in three days.

The method, however, is painful, and in some cases impracticable (for instance, when the ulcer is situated on the glans penis).—*Journal of Cutaneous and Genito-Urinary Diseases*, September, 1889.

Cinchonism and Means of Preventing it.—DR. COGLITORE, in the *London Medical Recorder* of August 20th, after enumerating the principal symptoms of poisoning by quinine, says that in cases of toxæmia no good is obtained from various other remedies employed as substitutes for quinine (arsenic, salicin, eucalyptus, etc.). He finds that quinine is always well borne if given with ergotin and opium. This is his formula:

℞.—Sulphate of quinine . . . grs. xij.
Bonjeau's ergotin . . . . " v.
Opium . . . . . gr. j.—M.

Make into three powders, given at intervals of one hour.

Given in this manner, quinine succeeds in the gravest cases, and gives rise to no symptoms of cinchonism.

The Thermo-cautery in Mastoid Periostitis.—DR. E. MÉNIÈRE, in the *Centralblt. für Chirurgie*, advises the use of the thermo-cautery in periostitis of the mastoid process in place of the method of incising the skin, as advocated by Wilde. The affection frequently follows both acute as well as chronic otitis of the middle ear, and will be recognized as a most painful swelling back of the ear. An incision made with the thermo-cautery is superior to the old method of treatment for the following reasons: First, there is no bleeding; second, no anæsthetic is necessary; and third, the danger of infection is avoided. Ménière has successfully treated fifty-six cases in this way, in eleven of which the disease was primary. Should the opening of the mastoid process subsequently be necessary, the wound produced by the thermo-cautery may be enlarged and the bone opened through it.

Regarding the latter operation, RICARD, in the *Gaz. des Hôpitaux*, No. 23, 1889, discards all trephining instruments, and advocates the use of hammer and chisel. He also claims that better results will be obtained if the anterior portion of the process be opened into instead of the posterior. The skin should, therefore, be dissected away from the back toward the front.

Chloralamid.—The new hypnotic chloralamid seems to be still holding its place and keeping up its initial reputation on the Continent at least. DR. J. HAGEMANN, in *Berliner klin. Woch.*, of August 19th, gives a detailed history of fifteen cases in which the drug was used. These included cases of ischias, tabes, neuralgia, hysteria, aortic and mitral insufficiency, aortic aneurism, aortic stenosis, phthisis, anæmia, arthritis, syphilitic brain trouble, and lead poisoning. In almost every instance the drug acted like a charm; in one only, the case of hysteria, was its hypnotic action almost entirely absent; in one or two others its action was variable. Among the points in favor of chloralamid, Hagemann cites the absence of influence upon the circulation, kidneys, and stomach. Also, that in no case was there any symptom of the drug becoming a habit.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, SEPTEMBER 14, 1889.

HEALING OF ASEPTIC BONE CAVITIES.

As is recognized by every surgeon, the healing of the cavities of greater or less size, left after the removal of tuberculous or osteomyelitic disease of the bones, is generally tedious and often very unsatisfactory. The conditions for healing are less favorable than in almost any other wounds; the walls are rigid and cannot collapse as do those of an abscess, and often the soft tissues cannot come in contact with the floor of the cavity and thus promote a speedier union. Before the introduction of antiseptic and aseptic surgery, operations on the bones were not only attended with a large mortality, but when the patient escaped the more serious complications there was still a long period of suppuration, with its drain upon the system. This has now been changed, in a very great degree, by the careful application of antiseptic principles. It is now quite possible to secure the healing of extensive bone cavities or bone defects in a perfectly smooth manner, without any febrile excitement or a single drop of pus. This healing is effected by the formation of a mass of granulations, which becomes converted into reparative tissue rather than into pus, but at best the process is tedious and defective.

Attempts have been made by different surgeons to procure speedier and more perfect results, and with considerable success. DR. NEUBER, of Kiel, some years ago introduced the method of implantation of skin flaps, after chiselling or gouging the bone sufficiently to allow the soft parts to be brought into contact with the floor of the cavity. These flaps were fastened securely into position with bone nails, and in many cases primary union was effected; but there are several serious objections to the method: 1st. There is unnecessary removal of healthy bone required, in order to allow the implantation of the flaps. 2d. The flaps are liable to slough and leave defects which require a long time to heal; and, 3d. An irregularity in the surface of the limb will be left, which is undesirable. The method, however, is useful, and has been employed considerably.

The attempt has also been made by SCHEDE and others to secure healing under an aseptic moist blood-clot, and exceedingly favorable results have been obtained. The objections to the method are: 1st. It causes an unnecessary loss of blood, which, in some cases, would be dangerous. 2d. It leaves a collection of fluid which forms an admirable culture field for pathogenic microbes. 3d. It transgresses an almost inviolable precept of surgery—that all collections of blood and blood-clots must be removed from wound cavities.

DR. SENN (*The American Journal of the Medical Sciences*, September, 1889) conceived the idea of substituting aseptic and antiseptic decalcified bone-chips for the blod-clot, as they are absorbable, firm, and form a good scaffold upon which the granulations can be supported. With his usual industry he made numerous experiments upon dogs, before applying the method to man. The results of his experimental work proving satisfactory, the procedure was applied to patients with exceedingly favorable results. In operations upon the skull, it was found that a decalcified, aseptic bone-disk, fitted tightly into the trephine opening, not only promptly arrested hemorrhage from the margins of the bone, and formed a means of preventing adhesion between the external parts and the dura mater, but being gradually absorbed, a mass of granulations took its place, and the defect was closed either by bone or by a dense cicatricial tissue. It is recommended that the disk shall have a number of perforations in it, both for the purpose of drainage, and to allow granulations more easily to penetrate it. For the healing of bone cavities, chips of decalcified bone are used, after thorough disinfection of the cavity and the dusting of both the bone chips and the cavity with iodoform. The results claimed are rapid healing under one or two dressings, with entire

restoration of the continuity of the bone. Senn holds that antiseptic decalcified bone is the best substitute for living bone-grafts in the restoration of a loss of substance in bone, and that in the treatment of bone cavities it is preferable to Schede's blood-clot, as it is not only perfectly aseptic, but at the same time also a strongly antiseptic substance. Implantation of a disk or plate of antiseptic decalcified bone into a cranial defect may be relied upon as a hæmostatic measure in arresting bleeding from the vessels of the diploë; it constitutes a good temporary substitute for the lost portions of the cranium; it prevents the direct union of the brain or its envelopes with the pericranium; and, finally, it furnishes the most favorable condition for the production of new bone from the margins, and closure of the remaining defect by a firm and unyielding membrane. The packing of an aseptic bone cavity with chips of antiseptic, decalcified bone guards against unnecessary loss of blood, and exerts a potent influence in the prevention of infection by pus microbes that might have remained upon the surface of the wound or in the tissues. Capillary drainage by an absorbable drain should be established after implantation, for the purpose of preventing the accumulation of more blood in the wound than is necessary to form a temporary cement substance between the bone-chips, and between the contents of the cavity and the surrounding tissues. In the treatment of an aseptic bone cavity by implantation of chips of antiseptic decalcified bone, the packing answers the purpose of an antiseptic tampon and furnishes the best medium for the growth and development of the tissue resulting from the regenerative process initiated by the trauma. Secondary implantation can be successfully practised in the treatment of a suppurating bone cavity after suppuration has ceased, and the cavity can be transformed into the same favorable conditions for healing as an aseptic wound.

LITERARY PIRACY.

OUR attention has just been called to the most glaring example of literary theft that it has ever been our misfortune to be called upon to expose. Our esteemed contemporary, *The Lancet*, in its issues of May 18th and June 22d, contains a lengthy paper on "The History and Use of Anæsthetics in Midwifery. By Frederick W. Allwright, M. D., L.R.C.S.I.," which is taken bodily, in the most barefaced manner, from Dr. J. C. Reeve's chapter on "Anæsthetics in Obstetrics," in the first volume of Hirst's *American System of Obstetrics* (Philadelphia, 1888). Dr. Allwright—he would be more appropriately named Allwrong—has not added a single original sentence to the lengthy paper as it appears in *The Lancet*, although he has gone to the trouble to substitute here and there a synonym, or to invert the arrangement of words. We trust that the editor of *The Lancet*, who has been the innocent victim of this gross piracy, will give it the fullest publicity, so that, the true character of its author being exposed to public gaze in his own country, he will cease to be a source of possible discredit, through his devious methods, to the community in which he lives.

AT Boston, on Tuesday, Wednesday, and Thursday of next week, two of the National Special Societies will hold their annual meetings. The American Gynecological Society will meet at the Institute of Technology, under the presidency of Dr. H. P. C. Wilson, of Baltimore, and the programme contains a large number of most attractive titles.

The American Orthopedic Association will meet in the adjacent building of the Natural History Society, under the presidency of Dr. E. H. Bradford, of Boston, who, on taking the chair, will deliver an address on "American Orthopedics." A number of papers are on the programme, and on Wednesday there will be a very full discussion of the treatment of hip-disease, with a view to formulating the opinions of the members.

THE Southern Surgical and Gynecological Association will meet at Nashville, on November 12th, 13th, and 14th, and has issued a very full preliminary programme and a general invitation to the profession to attend the sessions. Dr. Hunter McGuire, of Richmond, is President for the year.

THE American Public Health Association will hold its next annual meeting at Brooklyn, N. Y., October 22, 23, 24, and 25, 1889. This Association comprises over eight hundred members, all devoted, officially or otherwise, to its declared purpose—the advancement of sanitary science and the promotion of organizations and measures for the practical application of public hygiene.

With the hope of still further promoting its objects, it is proposed, at the forthcoming meeting, to provide an exhibition of everything available adapted

to the promotion of health. The exhibits will be classified under nine divisions, as follows: the dwelling, schools and education, factories and workshops, clothing and dress, food, sanitary engineering, public health administration in cities and towns, the laboratory, Red Cross.

The Exhibition will be held in the hall at the northwest corner of Fulton and Pineapple Streets, one block from the Brooklyn Institute, where the sessions of the Association will be held. It will be opened to the public without charge on October 22d, at 1 P. M., and will continue open until December 1st.

Applications for space may be made to any member of the Committee on Exhibits, accompanied with details as to name and character of article proposed, space required, etc.

At the close of the Exhibition the Association will award diplomas to exhibitors of specially meritorious articles based upon the judgment of experts.

AN Army Medical Board will be convened in New York City, on October 1, 1889, for the examination of such persons as may be properly invited to present themselves before it as candidates for appointment in the Medical Corps of the Army. Application for an invitation should be addressed to the Secretary of War, stating date and place of birth, place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character, and moral habits; testimonials as to professional standing from the professors of the medical college from which the applicant graduated, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the Board.

Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington. There are at present nine vacancies in the Medical Corps in the grade of Assistant Surgeon.

DR. JOHN T. BANKS, of Dublin, has just been made a Knight Commander of the Bath, Civil Division, and, therefore, becomes Sir John Banks, K.C.B. Sir John is Physician in Ordinary to the Queen in Ireland, and Regius Professor of Medicine in the University of Dublin.

THE Asylum for the Insane in Newcastle County, Delaware, will presently, by purchase, become a State institution. Dr. D. A. Harrison, who has been the resident physician at the St. Johnsland Branch of the King's County Lunatic Asylum, has been invited to become the Medical Superintendent.

IN Belgium, all passenger trains are required by law to have a box of surgical appliances, called a *boite de secours*, containing many of the articles that are first called for in emergencies; a few short and plainly printed explanations accompany each package. In this land of magnificent distances, the indications for provisions against accident would seem much stronger than in a compact little kingdom like Belgium.

THE British profession has suffered another severe loss in the death of DR. SAMUEL O. HABERSHON, which occurred at his residence in London, on the 22d ult., aged sixty-four years. He succumbed to gastric disease accompanied by hæmatemesis—one of a class of affections which he did so much to elucidate. He was well known in this country by his works on the *Diseases of the Alimentary Canal*, which passed through three editions; *On Diseases of the Stomach, the Varieties of Dyspepsia; On Some Diseases of the Liver;* and *On the Pathology of the Pneumogastric Nerve*. He was a careful and painstaking observer, possessed of extensive practical knowledge; to these qualities were added high principle, rectitude of conduct, and sterling friendship, which gained for him honor and respect throughout a long career.

SOCIETY PROCEEDINGS.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Stated Meeting, March 15, 1889.

THE PRESIDENT, CHARLES T. PARKES, M.D., IN THE CHAIR.

(Continued from page 275)

DR. BAYARD HOLMES made some remarks

ON THE RELATION OF BACTERIA TO PUERPERAL ECLAMPSIA.

It is well known that the subcutaneous injection of the urine of the healthy does not result in symptoms of uræmic poisoning, while these symptoms are exactly simulated by the injection of nephritic urine. The demonstration of acute nephritis in fatal cases of puerperal uræmic convulsions is not wanting. The bacterial origin of many other cases of acute nephritis is most emphatically de-

monstrated (Babes: *Bact. untersuch u. septische Processe*, etc., Leipzig, 1869). Bacteria have been demonstrated in some cases of uræmia. On no other supposition or theory have uræmic convulsions been satisfactorily explained. A toxæmia is conceded by all to be the prime condition of the disease. The normal constituents of the urine do not produce this toxæmia; the products of nephritic urine do produce it. Nephritis is usually, if not always, present. This nephritis is sometimes, if not always, due to bacterial thrombosis or embolism. This is the only adequate cause which has up to the present time been demonstrated in any case. It is in perfect accord with the origin of nephritis under other circumstances.

As there must in all cases be a point of entrance of the bacteria and diminished local resistance, we may be asked to go a step further and demonstrate these. The point of entrance is probably the intestinal tract. The low state of vitality which is manifest in many pregnant women, living after the manner dictated by modern civilization, results in such a low state of general resistance that teeth are invaded and abscesses appear elsewhere. Mechanical constipation produces in the intestinal tract points of arrested circulation or pressure atrophy where invasion takes place into the lymphatics of the mesentery. These bacteria do not need to be pathogenic under ordinary circumstances. They circulate freely in the blood until they come to the kidneys and other organs, where mechanical capillary stasis is present from the pressure of the enlarged uterus, assisted, perhaps, by improper dress. Under such circumstances, otherwise harmless saprophytic bacteria multiply in the non-resisting but still living tissues of the kidney, and the products of their growth produce coagulation-necrosis and all the less marked appearances of nephritis. The extent of these changes need not correspond to the severity of the symptoms. In case the infection produces a very toxic ptomaine, the lesion may be only just enough to prevent its rapid elimination; while, in case the ptomaine is less toxic, the symptoms may be trivial until the suppression of urine is almost complete.

DR. DANIEL T. NELSON then spoke on the

DIAGNOSIS AND PROGNOSIS OF PUERPERAL ECLAMPSIA.

Puerperal eclampsia is an acute epilepsy in a pregnant woman, due to an acute anæmia, rarely a hyperæmia, of the brain, produced by poisons circulating in the blood, such as urea, cholesterin, and the like, produced by defective excretion by the kidneys, intestines, and skin. The disease occurs more frequently in first pregnancies. The pregnant uterus pressing upon the ureters tends to narrow their calibre and prevent the discharge of urine into the bladder; or the tissues about the uterus are unyielding, elongating the ureters as the uterus grows, and so preventing the flow of urine; and, in a reflex way, the pressure of the uterus upon sensitive nerves and ganglia in the pelvis, and perhaps from morbid conditions in the uterus and ovaries, acting directly upon the brain, especially the medulla and pons, all the reflex centres being normally exalted in their sensitiveness during pregnancy to facilitate the ordinary processes of nutrition.

The disease is more frequent in irritable and highly sensitive organizations, and in those of corpulent habit, for, in such, excretion is not as thoroughly performed as in others. Sudden suppression of the action of the skin, too, is not an infrequent cause of the disease, causing substances of a poisonous nature to be retained in the blood which would otherwise be thrown off. Puerperal eclampsia, then, is not properly a disease, but rather a symptom of diseased conditions—particularly of the excreting organs.

With this brief description of the disease, the diagnosis is usually easy. When fully developed, the disease is not likely to be confounded with any other, except true or chronic epilepsy. The history of the case and the fact of pregnancy will easily distinguish puerperal eclampsia. Convulsions arising from disease of the nervous centres are likely to be local, affecting only the portions of the body supplied by these centres. Diseases of the meninges of the brain or spinal cord, producing convulsions, are likely to be attended with pain, fever, and irregular nervous disturbances, which readily point to the location of the disease. The determination of whether the eclampsia is due to acute or chronic disease of the kidneys is of little moment in diagnosis, but is of great importance in the prognosis of the case.

The most important diagnostic symptoms for the physician to note and rightly interpret, are the various nervous disturbances, such as severe headache, dizziness, persistent nausea and vomiting, diarrhœa coming on suddenly and watery in character, insomnia, special senses disordered—as dimness of vision, spots floating before the eyes, ringing in the ears, disagreeable taste and smell—disturbance of motor nerves, irregular spasms of voluntary and involuntary muscles, reflexes unusually active.

Œdema, general or local, temporary or continuing, should always attract attention to the condition of the excretions, and examinations of the urine be made regularly and frequently. Defective excretion by the bowels and skin should likewise be noticed and corrected.

Poisoning by lead, arsenic, or the preparations of mercury, is to be considered, but the history of the case is likely to eliminate these readily.

The examination of the urine is of the greatest importance to determine the presence or not of albumin and the amount of urea excreted.

The intelligent and observing physician is likely to detect readily the premonitory symptoms if he has the opportunity to look for them; but, unfortunately, he is usually first called only after the first spasm has occurred, and when the diagnosis is already made.

This is a disease, surely, in which prevention is the best cure. The prognosis is always grave, and can only be fully determined when the extent of the lesions in vital organs is known, and the rapidity with which the excreting organs are carrying off the poisonous substances. The more frequent the convulsions the longer they continue, and the greater their severity the more serious is the prognosis. The continuance, after delivery, of serious organic disease of the kidneys and lesion of important structures in the brain as the result of the convulsions, will complicate the ultimate recovery and render the prognosis uncertain. The diminishing frequency and severity of the spasms, with the free secretion of urine, with urea increasing and albumin decreasing, and a subsidence of the nervous disturbances, will enable us to hope for a speedy and complete recovery and no return in subsequent pregnancies.

DR. EDMUND J. DOERING then spoke on the

PROPHYLAXIS OF PUERPERAL ECLAMPSIA.

Albuminuria during pregnancy may not cause puerperal eclampsia, and eclampsia may occur without a renal lesion, but the fact remains that the danger of puerperal eclampsia is manifoldly increased when a pregnant woman suffers from renal insufficiency, whether the same be organic in character or due to mechanical interference with the renal circulation. It is our duty then to examine carefully from time to time the urine of every pregnant woman. It is unfortunately true that in the majority of cases of pregnancy the urine is never examined. It is also true that in the majority of cases in which the urine is examined, the heat or nitric acid tests constitute the so-called "urinary analysis." The fact seems to be utterly ignored that the urine may be and often is entirely free from albumin and still indicates the existence of a serious renal lesion. We have not done our duty to our patient, particularly if she be a primipara, till we have determined the exact amount of urine secreted in twenty-four hours, and ascertained the actual specific gravity, so as to know the amount of solids passed, together with a careful chemical and microscopical analysis of a mixed sample. Occasional faint traces of albumin occur in a large percentage of pregnant women, and is of no special significance provided the quantity and specific gravity of the urine remain normal. But the persistence of albumin or the presence of casts with or without albumin, or a diminished amount of solids passed in twenty-four hours, indicates the necessity of prompt prophylactic treatment to ward off eclampsia.

The patient should be clad in woollen garments. Extra precautions should be taken to prevent chilling of the body by exposure to cold or wet. The diet should consist principally, if not entirely, of milk, which can be consumed in quantity varying from two to four quarts per diem. Fruit and fish may be permitted, also farinaceous articles of food and some vegetables. Meats are to be used sparingly, if at all; moderate exercise may be advised. The therapeutic indications are, of course, to keep up a free action of the skin, bowels, and kidneys. Warm baths should be regularly employed. The bowels should be moved daily, and an excellent laxative for this purpose is cream of tartar in tablepoonful doses every morning. Compound jalap powder has also a favorable action. In anæmic subjects iron in the form of Basham's mixture given several times daily will be of decided benefit, being tonic, diuretic, and diaphoretic in its action. Infusion of digitalis, in combination with acetate, citrate, or bitartrate of potassium, is also an excellent remedy. The patient should be advised to partake freely of fluids, and Vichy, Buffalo Lithia, and Londonderry Lithia waters are specially indicated. If there is great nervous irritability, rectal injections of chloral at night will be of great service. Finally, if we have exhausted all these measures and the symptoms become worse, the dropsy increases, or the central nervous system becomes involved, the induction of premature labor may have to be seriously considered or become absolutely necessary.

DR. CHARLES WARRINGTON EARLE then spoke on

THE TREATMENT OF PUERPERAL ECLAMPSIA.

Notwithstanding everything which has been suggested in the way of prevention and treatment during the past twenty years, puerperal eclampsia still remains the *bête noir* of obstetrics.

According to many of the older teachers, one-half of the patients attacked with the disease died; and in all the cases which Fordyce Barker could collect up to 1855, thirty-two per cent. occurring before and during labor, and twenty-two per cent. of those after delivery, ended fatally. In this gentleman's practice to 1874, the mortality had diminished to fourteen per cent. Any treatment decided upon must necessarily be varied according as the treatment is administered to one early in pregnancy, during parturition, or after delivery.

The means for treating this terrible condition may be ranged under the following headings:

Evacuants and Detergents.
Nerve Sedatives and Anodynes.
Anæsthetics.
Bleeding.
Operative Measures.

The remedy indicated, or the procedure which offers the best result, differs according to the time of the eclamptic attack. The treatment, then, whatever it is to be, should be considered during the following periods:

Before, during, and following labor.

Whatever the time may be, however, or what plan of treatment it is proposed to inaugurate, it goes without saying that nothing of an exciting nature which can be avoided should be used; that the surroundings should be such that good air and freedom from incumbrances as regards clothing, etc., are insured. If vaginal examinations are objectionable to her, no more than simply enough to acquaint ourselves with the absolute progress of the dilatation of the os should be made. Indeed, every cause which may produce worry on the part of our patient must be avoided.

We must remember that, however well demonstrated the uræmic theory may be to us, there have been during all times a goodly number who believe that puerperal eclampsia is a neurosis, and that any reflex irritation of the spinal system is liable to exaggerate the convulsions.

TREATMENT DURING EARLY PREGNANCY.

Sometimes the attack has been expected; for while exceptionally it takes place without any premonitory symptoms, usually there is œdema, or a terrible neuralgia, or a condition of the nervous system that has caused the experienced accoucheur to expect it. The patient has had preventive treatment. It does not suffice; the convulsion is on. We must now shape our treatment for this case with the knowledge that a single convulsion may cause the death of a patient, and that it is the rule that usually in two days either a cure is effected or a serious complication makes its appearance which will prove fatal.

As rapidly as possible these things should be done: A little chloroform given; the patient put in a hot bath; and a non-irritating cathartic—one which will produce a large, watery stool—administered. Whatever procedure may be adopted later in the case, it appears to me that the foregoing treatment is plain. Of course, as adjuvants, a hypodermatic of morphia may be given and a dose of chloral, either by mouth or rectum. The question will also arise at once as regards the expediency of using pilocarpine as an aid in the elimination by the

skin of retained excrementitious matters. The value of this remedy will be discussed later.

More than a passing notice should be given to the hot baths. They are extensively used in many of the largest obstetrical hospitals. "The patient is placed in a bath-tub filled with water at a temperature slightly above 99° F. The tub is then covered with a heavy blanket, leaving the face free, and the temperature is gradually elevated to 110° or 112° F. She remains in the bath thirty minutes. A towel wrung out of ice-water and placed upon the head relieves any distressing cephalic sensations. While in the bath the patient drinks large quantities of water. Upon emerging from the bath she is covered with a warm sheet and enveloped in an upper and lower layer of thick blankets, so that only the face is exposed. Within a very few minutes free perspiration is observed. The sweating is continued for two or three hours. According to the gravity of the case, the hot-water bath may be repeated once daily for an indefinite period. The relief of all threatening symptoms under this simple plan of treatment alone is surprising. Sometimes the hot-water bath acts as an efficient excitant of uterine contractions, and premature labor is induced."

Concerning the usefulness of chloroform and chloral, there is no doubt. The administration of both have their opponents, but in the speaker's judgment they are exceedingly useful.

Some of the most brilliant recoveries in the literature have come about from hypodermatics of morphia, rectal administration of chloral, aud the inhalation of chloroform. He should not fail to suggest, even in a case where the convulsions are occurring thus early in pregnancy, the propriety of venesection.

If the convulsion persist for a long time or if the attacks come frequently, the question of the induction of labor would suggest itself even thus early. This, however, is a subject concerning which authorities do not by any means agree. The question comes fairly before us early in pregnancy, or any time before labor commences with the os not dilated. Are we justified in attempting an operation the irritation of which may possibly produce a convulsion, and the completion of which may not cause a suspension of the attack for which the operation is commenced?

The speaker ranged himself with those who would consider the propriety and justifiableness of carefully—while meeting all therapeutic indications—evacuating the uterus of its contents.

TREATMENT OF ECLAMPSIA DURING LABOR.

Some of the factors entering into the treatment of convulsions during pregnancy or before full term and which are not fully agreed upon by the profession, do not engage our attention at this time; for instance, the induction of labor, either in the interest of the mother or child. Labor has already commenced; the convulsion is present. To him there is no question as to the propriety of hastening it (labor) by every means possible, and the possibility of producing a convulsion by artificially dilating the cervix is so small that it need not be entertained.

In a considerable number of cases which he had collected from the journals published during the last two or three years, and which do not enter into any of the tables published in the text-books, there are some data favoring venesection at the time. Indeed, Swayne says that in thirty-four cases occurring in his practice bleeding, anæsthetics, and delivery—in the order named—have given the best results. James Murphy (*Lancet*, 1886), however, in the treatment of five cases with pilocarpine as the principal remedy, aided by other adjuvants, has saved all his patients. His plan is to inject subcutaneously from one-fourth to one-third grain of this drug every six hours, and his results are certainly remarkable. In one of his cases thirty-three convulsions occurred during the seventh month, but after the use of the pilocarpine premature labor was averted and a healthy child born at term.

Returning, however, to consider bleeding, it should be said, according to Kucher, that this procedure has been entirely abandoned in the Vienna clinic, and the same author says it is very doubtful whether it ever has any beneficial effect whatever. In fifty-two cases, upon which he bases his paper, only seven were fatal. This is an excellent showing when we consider that the mortality was formerly twenty to thirty per cent. They depend in the Vienna hospitals upon diuretics, diaphoretics, and cathartics. It is also believed that the indication is to expedite labor by all reasonable means, but that too active interference is more dangerous than the eclampsia.

The use of veratrum viride, since the days of Fordyce Barker, has had its advocates, and more recently, in a discussion which took place at the Ninth International Medical Congress, it found a considerable number of advocates. Dr. Jewett, of Brooklyn, in an experience of twenty-six cases, seems to show that in veratrum viride, if given early, we have a well-nigh certain means to prevent death from puerperal eclampsia. Some one has said if the pulse be kept at 60 by veratrum no convulsion can take place. Dr. Jewett gives the drug hypodermatically, and keeps the patient quiet and in the lying position.

Breus has had remarkable results from the hot pack—seventeen cases and only two deaths. It is claimed for this treatment that it does not induce abortion or premature labor. Patients are immersed in the hot bath, and its action continued by the hot pack in blankets. In many cases the results are not as good as they might be, from the fact that the details of treatment are not fully and faithfully carried out.

If chloroform is used it should be continuous and its effect profound. If chloral is to be used, and cannot be given by mouth, thirty or forty grains should be given by rectum, and repeated in twenty minutes, if necessary.

With the present light on the subject, it appears that for convulsions at full term the hot bath, anæsthetics, and a termination of labor as rapidly as can be done without injury to the soft parts, is the treatment for to-day

FOR CONVULSIONS AFTER DELIVERY.

Here factors are wanting which were present while the woman was in labor. The uterus has been emptied of its contents, but the convulsions continue. The induction of labor or rapid delivery by version or forceps cannot now be considered. The indications are to control the eclamptic attack with an anæsthetic, and to eliminate with all rapidity by the skin, bowels, and kidneys. In addition to the hot bath, we now have the pilocarpine, aided by what seems to be the best cathartic—elaterium. To produce the full effect of the last-named drug, we should have at our command as potent a hypodermatic

tablet as we have of pilocarpine or morphia. This is particularly true for cases which cannot swallow.

To sum up, then, we have:

1. For convulsions before delivery: The hot bath, morphia and pilocarpine hypodermatically, chloral and bromide of potassium by mouth or rectum; veratrum viride to reduce heart's action and lower arterial tension; possibly bleeding; the induction of labor.

2. For convulsions during labor: The hot bath, morphia, chloral, anæsthetics; a rapid delivery with all precautions.

3. For convulsions after labor: Control eclampsia by anæsthetics, and rapid elimination by all the emunctories.

(To be concluded.)

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, April 19, 1889.

A. B. JUDSON, M.D., CHAIRMAN.

DR. V. P. GIBNEY presented a patient, a girl fourteen years old, on whom he had operated for

DOUBLE PSOAS ABSCESS FOLLOWING POTT'S DISEASE

of nine years' duration. The carious vertebræ were evidently consolidated, when last November abscesses were discovered, and the patient was brought under treatment. On the right side the tumor was incised in Scarpa's space, and long forceps were passed under Poupart's ligament through the iliac fossa and into the lumbar region, and a counter-opening was made on the forceps along the border of the erector spinæ muscle. Pieces of bone escaped with the pus. The cavity was curetted and the bone scraped gently. With antiseptic dressing and injections of carbolic acid solution 1:40, and one per cent. creolin solution, both wounds closed in a month. The left side was then operated on by simple incision and drainage. Large quantities of bone detritus were scooped out with the finger. A sinus still remains on the left side from which a piece of bone is occasionally discharged.

The case was exhibited as showing the advantage of Owen's method over attacking simply the sac and not the whole suppurating track.

Dr. Gibney believed it would have been better to treat both sides according to Owen's method; but in general he doubted the propriety of doing this operation during exfoliation, which would necessitate a subsequent operation. It is also important that the patient should be in a pretty good condition.

DR. R. H. SAYRE had used injections of peroxide of hydrogen in large abscess cavities, with better results than from carbolic, or bichloride, or boro-salicylic solutions.

DR. GIBNEY said that a similar experience had been reported by Dr. Vance.

DR. JUDSON thought an objection to operating on these cases was that for the natural incarceration of the pus and detritus we substituted an artificial opening, necessitating antisepsis to hasten cicatrization. If these accumulations are doing no harm, it is better to leave them for removal by natural processes; and if in due time they perforate the skin, the general and local conditions are ready to promote evacuation and speedy cicatrization.

DR. J. A. WYETH said that the operation is indicated when large abscesses are situated on exposed parts of the body, and liable to injury and subsequent septic complications. He recalled the case of a woman who, thirteen years after being cured of Pott's disease, slipped and fell on a large gluteal abscess. The accident speedily gave rise to symptoms of sepsis, with high febrile movements, and several operations under ether were necessary for the removal of bone detritus, which was spread through the gluteal muscles. The patient ran great risks, but finally recovered. He had had other similar cases. A psoas abscess behind the peritoneum causing no trouble should be left alone, but one pointing in the thigh, back, or other exposed situation should be operated upon. as the danger of the operation is almost *nil*.

DR. N. M. SHAFFER was reminded of the history of a patient with Pott's disease and an abscess occupying the gluteal region and the anterior part of the thigh. The child fell, striking the gluteal tumor. The immediate symptoms were alarming, but without the adoption of any special treatment, the accident resulted in the entire disappearance of the abscess. If there were any means of determining with certainty when an abscess from Pott's disease contains bony detritus, it would be preferable to operate; but while spondylitis is still active, it is better to postpone operation as long as possible. He recalled a case of Pott's disease and hip-joint disease which he had been watching for several years, where spiculæ of bone as large as the end of the finger were expelled in a sudden and violent attack of coughing. The bone was undoubtedly from the cancellous structure of the sixth or seventh cervical vertebra. The patient was relieved at once, and physical examination showed that very little trouble had been caused by the entrance of the bone through the lung-tissue into the bronchial tubes.

KNOCK-KNEE—CLUBFOOT—DEFORMITY FOLLOWING HIP-DISEASE.

DR. WYETH related two cases in which he had corrected in- and out-knee in the same patient by double osteotomies. The patients were three and a half and four years old respectively. Both were discharged entirely relieved. Strict antisepsis was followed and the limbs were dressed in plaster-of-Paris in a position of over-correction. He prefers MacCormac's incision on the outer side and just above the capsule, since the saphena vein and anastomatica magna artery are not endangered, as in Macewen's operation on the inner aspect of the thigh. He also briefly related three cases in which patients, aged thirteen, eighteen, and twenty-six years respectively, had been relieved of the deformity following hip-disease, and restored to good locomotion by operations on the femur. The method pursued was Gant's osteotomy below the lesser trochanter. The after-treatment had been Buck's extension and Hamilton's long splint. In one of the patients there had been double hip disease. Two months after the left femur had been operated on the right was operated on; and four months after the date of the first operation the patient was discharged cured, with good locomotion.

He also related two cases in which congenital talipes equino-varus of the most exaggerated type had been corrected with good recovery, and with the feet in excellent shape. Tenotomy of the tendo-Achillis, tibialis anticus,

and tibialis posticus was first done; the first two subcutaneously, and the last by open incision, the tendon being dissociated from that of the flexor digitorum, and divided on an aneurism needle. The operation was completed by an osteotomy as follows: An incision was made on the outer side of the dorsum, exactly over the point of greatest convexity; the tissues were lifted from the tarsus by an elevator, and a conical section including portions of the calcaneous, astragalus, cuboid, and scaphoid was removed. The rule should be to remove all parts which prevent replacement of the foot. The foot being brought into normal position by eversion and rotation, aseptic dressing and plaster-of-Paris completed the treatment, the result of which was excellent.

DR. GIBNEY said that the anatomical point raised in the paper concerning supra-condyloid osteotomies certainly commends to us the operation of MacCormac. Although in- and out-knee in the same subject is rare, he had seen many instances of multiple deformity among Bohemians and Italians. He had recently done a sextuple osteotomy at one sitting, and is treating an ununited fracture of the right tibia, all the others having united.

DR. JUDSON thought that in congenital talipes the reduction of the deformity by mechanical or operative means is easy; but that is a small part of the necessary treatment. So long as the patient is growing, he must be under occasional observation, and, if necessary, made to wear for a few months, at intervals of two or three years, a brace fitted to the present needs, in order to prevent threatened relapses. In the deformities of the knee, there is especial reason for preferring mechanical means of correction, because here we have the advantage of the leverage found in the tibia and femur; while in clubfoot, there is only the tibia on one side, and, on the other, the short and many-jointed foot.

DR. H. L. TAYLOR said that late observation of the results of treatment is of especial importance in orthopædic practice. If surgeons and orthopædists would report the condition of patients five, ten, or more years after dismissal, a more intelligent choice of methods could be made.

DR. SHAFFER said that his experience with mechanical appliances in the treatment of talipes, leads him to think that many severe operations are performed on patients who could be better treated by traction. He recalled a case in which there was confirmed equino-varus, although three or four tenotomies, and five or six osteotomies had been performed. He had applied the "external lateral stretcher" and the patient is now walking on the flat of the foot. He referred to the interesting question whether osteotomy is advisable when there is motion in the hip-joint. In a patient on whom Dr. W. T. Bull had operated, some motion was found after etherization. The reduction of the deformity by osteotomy had been followed by persistent traction with the hip-splint; and good position and slight motion had both been retained.

DR. GIBNEY believed that the presence of motion is not a contra-indication to the operation. About six months ago, he had performed Gant's operation for a right-angled deformity. The flexion had been reduced from 90 degrees to 15 degrees, and the limb was retained at 15 degrees of flexion by a traction apparatus for three or four months, when it was removed and the patient allowed to walk about with a high shoe. After about six weeks, the flexion had increased to 25 or 30 degrees. Traction was re-applied, and the limb is being again brought down. He recognized the necessity of protective apparatus in order to retain or increase the result secured by operation.

DR. WYETH had operated in several cases where there was motion, and had refused to do it in others. In a patient whom he had seen with Dr. L. A. Sayre, there was considerable motion, and he had done a tenotomy for temporary relief, postponing osteotomy.

DR. R. H. SAYRE said that in the case referred to, improvement had followed the tenotomy, but an apparatus is necessary to prevent a return of deformity. He thought that in some cases sufficient reduction of the flexion might be brought about by section of the psoas and iliacus muscles. This had been done in one case in which, although the operation had been subcutaneous, injury of the vessels had been avoided. By open section, this danger would be avoided.

DR. J. D. WILSON expressed surprise at the frequent mention of elevations of temperature in the history of Dr. Wyeth's cases, which had been treated antiseptically. Have our teachings been too absolute, or do such temperatures really indicate imperfect antisepsis?

DR. WYETH replied that "the temperature of reaction," occasionally as high as 102 degrees, occurred in the first twenty-four hours, but it usually fell to normal in forty-eight hours. Traumatism, ether, shock, and the use of sublimate combine to produce this reaction, which might still be called an aseptic temperature. He closed the discussion by saying that the simplicity and safety of osteotomy had been shown by the cases he had reported. While no case of equino-varus treated the first two years of life should require tarsotomy, neglected cases will present themselves where nothing but tarsotomy will give relief. The operation may give considerable foreshortening to the foot, but one can certainly correct the deformity, however great, by removing enough bone; and if this be properly done, he believed it to be real conservatism.

CORRESPONDENCE.

THE INTERNATIONAL CONGRESS OF ALCOHOLISM.

THE International Congress of Alcoholism held its meeting in Paris from July 29th to August 1st, under the presidency of Dr. Dujardin-Beaumetz.

Three questions were to be treated principally during the session, the first being on the "Relations existing between the increase of the use of alcohol and the increase of insanity and criminality."

One of the important points in answer to this question was to learn the comparative increase of drinking saloons in different countries. M. Ivernés, Chief of Statistics at the French Ministry of Justice, was charged with the study of this question. Statistics very plainly show that there is an increase of crime in direct proportion to the increase of alcohol taken by each inhabitant. In France from 1873 to 1877, the average annual quantity of alcohol taken by each inhabitant was 2.72 quarts; from 1878 to 1882, 3.53 quarts; from 1883 to 1887, 3.83 quarts. During this time, the number of crimes and offences increased from 172,000 to 195,000, and the

number of insane people from 37,000 in 1872 to 52,000 in 1885.

In Belgium, from 1868 to 1882, each inhabitant on an average took from 7 to 9 quarts of alcohol; the number of crimes and offences increased from 1868 to 1882 from 1900 for every 100,000 inhabitants to 2877. The number of insane, which was 8.240 in 1868, has gone up to 10.020 in 1878.

In Italy, from 1872 to 1885, the quantity of alcohol taken increased from 2.7 quarts to 5 quarts for each inhabitant. From 1879 to 1885 the number of criminals increases from 1400 to 1500; the number of insane from 15,000 to 22,000.

These facts clearly show that there is a direct increase of crime and insanity with the increase in the use of alcohol; on the other hand, an additional proof is the fact that a decrease of the use of alcohol in a country is accompanied by a corresponding decrease in the number of crimes and insanity. In Norway, as was stated by M. Cauderlier, in 1844, each inhabitant on an average took 10 quarts of alcohol; in 1871, only 5 quarts; in 1876, 4 quarts. During this same time, the criminal statistics came down from 249 per 100,000 inhabitants to 207 and 180; while the number of insane patients came down in the same proportion.

The next question was "How to do away with this increase in the use of alcohol?" Dr. Drysdale, of London, recommended the suppression of the use of alcoholic liquors, as he mentioned the fact that life insurance companies find that those who abstain from the use of alcohol live about six years longer than others. This proposition, if it could be accepted, would be a very good one, but it is impracticable, especially in countries where they make wines. This being impracticable, the next proposition to take into consideration is whether it would not be possible to diminish the number of drinking places; but here the members of the Congress became quite divided, some averring that no good can be derived from such a measure, while others sustained it.

M. Cauderlier mentioned the fact that in Holland a law was passed to restrict to a maximum number the drinking places of each city; yet although this law has been strictly carried out, the number of crimes and insanity has not diminished in Holland; which is explainable by the fact that the same quantity of alcohol having been used, it probably was taken by the individuals in their own houses.

M. Milliet, of Switzerland, mentioned the fact that in the district of Thurgovia, where there are a great many drinking places, there are very few alcoholic persons; while in the district of Berne, where very few drinking places can be found, the number of alcoholics is very great.

M. Vaucleroy, of Belgium, said that we know that the quantity of alcohol employed has a tendency to increase every year; while in Holland, where the number of drinking places has been reduced, the quantity of alcohol used has remained the same, it is true, but has not increased, which demonstrates that the promulgation of the law has been of some utility.

Finally, the Congress voted on the two following propositions:

1st. "The increase of the use of alcohol is one of the principal causes of criminality, suicides, and insanity."

This proposition was unanimously adopted.

2d. "The diminution of the number of drinking places being one of the causes of the reduction of the use of alcohol, the Congress invites the government to take the necessary measures to reduce the number of drinking saloons."

This proposition was unanimously accepted, except by M. Milliet, who protested against it.

The second question placed before the Congress was, "The legal means to prevent the accidents, crimes, etc., due to insanity."

M. Motet opened the discussion by drawing attention to the fact that French laws contain no paragraph in regard to the responsibility of an alcoholic who commits a crime; the criminal is condemned more or less seriously according to the circumstances presented, but there is no strict article in regard to it. In civil law, on many occasions, a contract which had been made by a man in an alcoholic state has been declared null; the alcoholic state in such cases has been compared to insanity.

There are three different types of alcoholics: 1st. Simple non-pathological alcoholism. 2d. Pathological alcoholism with cerebral lesions. 3d. Pathological alcoholism with incurable cerebral lesions.

In the first category are placed simple or accidental alcoholism, to which belong the ordinary drinking persons, who, although not drunk, are under the toxic influence of alcohol.

The second division comprises all the pathological forms of alcoholism on the one hand, and all the subacute, acute or chronic mental states which are due to alcoholic intoxication.

In this class are placed all the insane, the degenerated, the epileptics, who are liable, when under the influence of alcohol, to be led to extreme and dangerous acts, which they would never do if not under this toxic influence.

M. Motet thinks that drunkenness is to be punished, as well as the crimes or offences committed while under its influence, when it is simple drunkenness, which could have been prevented by the patient himself. Drunkenness is also punishable when it is proven that alcoholic excitation has been produced for the purpose of committing a crime. There are also punishable, but to a less degree, those whose inferior intellect diminishes their tolerance toward alcoholic liquors on account of their inferior cerebral organization. Again, crimes or offences are not punishable when they have been committed while the individual is in an acute or subacute state of delirium tremens; the same can be applied in chronic alcoholism, where definite cerebral lesions exist; in such cases the patient is to be placed in an asylum until he presents no more alarming symptoms.

M. Decroix did not think it right to consider an alcoholic crime as an irresponsible one, nor does he believe that after one has committed a crime while under the influence of alcoholism, and has been placed in an asylum, that he ought to be allowed to run about after his apparent cure.

M. Duverger examined how the habitual drunkard is treated in other countries. He cited the English law promulgated in 1879, which says that an "habitual drunkard is an individual who cannot be considered as a true insane person, but yet who by his habits of drinking excessively alcoholic liquors is dangerous at certain moments for himself as well as for his sur-

roundings, and is then incapable to direct his person or his business. The habitual drunkard has also a right to ask his admission into a special asylum, but under only very few conditions can he be allowed to leave the asylum before the date which he himself mentioned in his demand."

In Georgia, the State possesses, at Midway, a public asylum for insane, in which are admitted the insane, idiots, epileptics and drunkards who have become insane —a certificate signed by three honorable physicians being necessary to allow the admission of the patient.

In France, although there is a law authorizing the confinement of any alcoholic insane, yet it is very rarely done, and their admission is often a matter of difficulty; this same law also mentions the fact, that any alcoholic who had been confined could be allowed to leave the asylum by a written certificate of all the physicians of the hospital.

The French Society of Temperance has asked that the Minister of Justice should be able to pronounce the interdiction of a person, who, by alcoholic habits, is found oftentimes in an habitual state of insanity, even if that person is married or has parents around him. Again, as the state of chronic alcoholism is not an absolute loss, but only a diminution of responsibility, the Minister of Justice could be allowed to nominate a judiciary counsel, which would be a semi-interdiction. Then if the interdiction or semi-interdiction is pronounced for insanity or feeble-mindedness due to the abuse of alcoholic liquors, the tribunal could be allowed to decide that the said person should be placed in a special asylum.

At the Congress which took place in Bruxelles, some time ago, a proposition of this kind was voted, that "all recognized alcoholics should be placed in interdiction on the demand of their family and the supreme judge of the district, and placed for a determined time in a special asylum."

M. Duverger says, that the fear of being interdicted or semi-interdicted for all business affairs on account of the abuse of alcohol would certainly act as a preventive against alcoholism; and the same fear would also exist as being locked up in a special asylum as an insane patient. In addition, the confinement of alcoholics, as insane or semi-insane, which would prevent them from committing any crime, would contribute to prevent one of the greatest misfortunes which can happen to a society, the condemnation of an irresponsible person.

M. Fournier de Plant approved the interdiction and judiciary counsel as an excellent remedy against alcoholism; he cited the fact of his having beeen on the judiciary counsel of a young and rich alcoholic, who was completely cured of the habit of drinking, on account of the difficulties which this counsel brought in preventing the young man from satisfying his habit.

M. Gouse then, opening another subject, said that it would be wise to recommend the creation of a certain number of drinking places, in the neighborhood of large manufactures, in which only non-alcoholic liquors could be found. These places ought, of course, to be under the direction of a society, which would have no interest in the business; these places could be very cheaply built and would be of very little expense to the temperance societies.

M. Bardy next spoke on the methods of recognizing the falsification of alcoholic liquors, and said that any alcohol containing more than 2 parts in 1000 of impure material ought to be excluded from circulation and ought not to be used.

The Congress then adjourned.

PARIS, August 8, 1889.

THE MORTALITY OF PNEUMONIA IN MALARIAL AND NON-MALARIAL DISTRICTS.

To the Editor of THE MEDICAL NEWS,

SIR: In the admirable paper on the mortality of acute lobar pneumonia, which appeared in the issue of THE MEDICAL NEWS, July 27th, one point of very great interest, as it seems to me, was overlooked, nor has it been considered in any of the other papers on the subject which have appeared from time to time in the medical journals. It is the mortality from this disease in malarial and non-malarial districts respectively. I do not refer to the complication with intermittent or remittent fever. Drs. Townshend and Coolidge refer to the influence of the former of these diseases in their paper, but I refer to the death-rate from pneumonia in malarial and non-malarial districts irrespective of any *apparent* complications with malarial disease in the former.

Conversation with physicians living in malarial regions has satisfied me that the mortality from pneumonia is far greater there than in sections of country where malarial affections do not prevail. My own practice has been for the most part in a section of country where malaria is practically unknown, so that I have been unable to make any comparison myself. I write, therefore, with the hope that such a comparison may be instituted by those in a position to investigate this point.

Possibly a study showing the prevalence of malarial affections and the death-rate of pneumonia at different times in the population supplying some of our large city hospitals with patients would throw light on this important subject.

In Piedmont, Virginia, where malaria does not prevail, pneumonia is considered one of the least dangerous of the acute febrile diseases, and it is rare to hear of a death from this disease, except in the aged or in those who have been habitually intemperate. On the other hand, I am told by physicians living in malarial sections of the State that pneumonia is one of the most fatal diseases with which they have to deal.

It will be time enough to consider the causes of the increased mortality of this disease in malarial districts when the fact of such increased mortality has been definitely established.

I trust that the subject will soon be investigated, and some positive conclusions reached.

Yours truly,

WM. C. DABNEY, M.D.

UNIVERSITY OF VIRGINIA,
August 21, 1889.

THE DIETETIC TREATMENT OF CHRONIC BRIGHT'S DISEASE.

To the Editor of THE MEDICAL NEWS,

SIR: I have read with unusual interest your review of the experiments and conclusions on that very important and interesting subject, "The Dietetic Treatment of Chronic Bright's Disease," by Semmola, Senator, Schreiber, etc. I have been giving some special attention

to this subject in cases recently under treatment by myself. In two cases of chronic diffuse nephritis, I have made milk and raw eggs the principal articles of diet, with the use of tr. ferri. chlor. and trinitrin, alternated with digitalis, with a gradual but steady diminution of albumin. One patient is aged sixty, and quite anæmic. The diet is undoubtedly the most important feature in the treatment in most of these cases.

I hope you will pardon me, but I cannot help adding my mite to a question of so much vital importance to humanity generally, and one upon which there have been so many conflicting opinions expressed and such diversity of views in discussion.

I am, yours very respectfully,

J. R. VINCENT.

WILKINSBURG, PA., Sept. 3, 1889.

NEWS ITEMS.

Statistics from Pasteur's Institute.—The latest returns from Pasteur's Institute, quoted from the *Union Médical*, August 24th, are as follows:

During the month of June of this year, 169 patients were treated at the institute. These comprised 24 who were bitten by animals which were experimentally proven to be suffering from rabies; 115 who were bitten by animals which were reported as mad after veterinary examination; 30 who were bitten by animals suspected of rabies.

The animals in question included 143 dogs, 24 cats, 1 horse, and 1 ass.

One case, which was brought under treatment seventeen days after having been bitten, and who was treated for two weeks, died of hydrophobia ten days later. Another case, which was admitted to the institute almost immediately after being bitten, and who was treated for six days, was seized with rabies nine days later.

Cheap Medical Service.—We read in the *Medical Record* for August 31st, that an association has been formed in New York which advertizes to furnish medical attendance to its subscribers for forty cents a month, and that all prescriptions for its subscribers will be filled by the leading pharmacists of that city for twenty cents each. "In all probability," says the *Record*, "the services and the medicines are not worth even that."

Austrian Pharmacopœia.—We read in the *Wiener klin. Wochenschrift* of July 11th, that the seventh edition of the Austrian *Pharmacopœia* has just been published. From January, 1890, all drugs and preparations must be dispensed according to the new *Pharmacopœia*; the druggist is also compelled to keep in stock a list of surgical supplies, including catgut, bandages, antiseptic gauzes and cotton, protective, drainage tubes, and the like. The new edition will contain a very large number of new drugs.

Fraud in Life Insurance.—A medical man of Belfast, Ireland, has been brought into court on a charge of fraud in regard to an examination for life insurance. He was found guilty of having declared as sound and healthy a person who had cardiac disease, with dropsy, and who died soon after. He was sentenced to imprisonment for six months.

Health in the French Army.—According to the official report of the French Minister of War, the mortality among the French troops has fallen from twelve to eight per thousand during the last year. From 1875 to 1887 there have occurred 141,648 cases of typhoid fever, and 21,116 deaths. The percentage of this disease has materially decreased of late, owing to the attention that is being paid to pure water supply in the barracks. The value of vaccination is proved by the fact that the number of smallpox cases has fallen from 1042 to 242, and these were mostly among recruits.

A Dog without a Brain.—At the last meeting of German neurologists, held in Baden-Baden, Prof. Goltz, of Strassburg, reported a most remarkable experiment. He cut out, in two operations, almost the entire cerebrum of a dog, leaving only the cerebellum and a small portion of the base of the cerebrum. The animal lived for fifty-one days after the last operation, and then died of pneumonia. The remarkable part of the experiment was the influence it had on the dog, who, a few hours after the operation, raised himself on his hind legs, put his paws over the side of his box, and looked inquiringly around. He could walk, eat and drink, and would chew any food that was placed in his mouth. Waking and sleeping alternated naturally. He was restless before feeding, but afterward would become quiet and sleep. A slight touch would awaken him from sleep. During urination and defecation the animal assumed the normal position. Hearing, taste, and smell were, of course, absent.—*Wiener med. Presse*, July 28th.

London Hospitals.—According to the *New York Times*, London has 81 hospitals and 50 dispensaries which are supported by voluntary contributions. These hospitals contain 8012 beds, of which number 5926 were occupied every day of last year, the number of patients being 74,316. Besides these, 1,038,427 out-patients were treated at the dispensaries and out-service departments of the hospitals. How many recurrent cases are included in these aggregates it is not possible to discover, but the reports do not suggest that there are any, so that if the statements are absolutely correct, they show that fully one in every four of the inhabitants of London receives gratuitous medical treatment when ill, a condition which at least suggests large abuse of this form of charity and want of vigilance in its administration.

New Method of Precipitating Sewage.—The problem of the disposal of the sewage of large towns has long defied the efforts of sanitary engineers to cope with it in a satisfactory manner. A new method of sterilizing and precipitating sewage has just been brought out which, it is claimed, accomplishes all that can be required of it at as little cost as any such system can be worked. The method has been put in practice experimentally at the Wimbledon sewage works, England. The principle underlying this plan of dealing with sewage is the employment of "amine" salts, in combination with milk of lime. At Wimbledon herring brine is used, and on mixing with the lime a very soluble gaseous reagent is evolved, to which the inventor has given the name of "Amerinol." This reagent possesses a peculiar briny odor, and when introduced into sewage is said rapidly to extirpate all microörganisms capable of causing putre-

faction or disease. The effect is almost instantaneous. By the action of the lime violent flocculation is caused, and subsidence takes place in about half an hour, the putrid smell of the sewage being replaced by the peculiar briny odor. According to Dr. Klein, the destruction of microörganisms is absolute. The total cost per annum of treating London sewage by this method is put at £125,000. Should the residue prove to possess any value for agricultural purposes its sale would tend still further to reduce the expense.—*Medical Press and Circular*, August 31, 1889.

Vaccination in Japan.—Vaccination has been obligatory for some years in Japan, and every infant is required by the police to be vaccinated. The value of the procedure is, however, well recognized by the people themselves, and the government hospitals in every town are always thronged with applicants on the weekly "vaccination day." In 1886 there were 1531 vaccinations to each 10,000 inhabitants.

Female Physicians in England.—There are at present 73 female physicians in England holding diplomas and licenses to practise. London possesses 22, other cities 34, and 17 in India are also included. The new Hospital for Women has a staff composed entirely of "lady doctors," although the consulting physicians are of the sterner sex. The medical school for women has a faculty of 48 professors, 4 of whom are ladies, and 91 students.

Typhoid Fever at Basle.—An epidemic of typhoid fever has been raging at Basle since the beginning of June. There have been so far 450 cases, with 31 deaths. The water-supply has been tested chemically and bacteriologically without anything being found to account for the outbreak. The epidemic is now subsiding.

The Death of Professor Loreta.—This eminent man, who was recognized as the leading operator in Italy and one of the foremost practical surgeons of the day, died at Bologna on July 23 by his own hand. This melancholy termination to a brilliant career has caused a most painful sensation to his professional brethren in his own country, where he was universally honored as a practitioner and both revered and beloved as a teacher. Loreta, whose hereditary title of Count was lost in the greater dignity of his professional designation, was born of a noble family at Ravenna, in 1831. Both his preliminary and his strictly medical studies were pursued at Bologna. They were interrupted for a time when he took an active part in the revolutionary movement of 1848, and it was 1858 before he took his degree. The years from 1858 to 1861 were spent in an obscure country practice; but in the latter year he was called to Bologna as head of the anatomical laboratory, and in 1865 he succeeded Rizzoli in the chair of clinical surgery. In spite of the intense activity of his professional life, Loreta found time for politics; he was an ardent Liberal, and some months before his death had been returned to the Italian Parliament by an immense majority of his fellow-citizens. He is best known, perhaps, by his operation for the relief of stricture of the pylorus, and by his method of dilating œsophageal stenosis from below through the cardiac orifice; but his operative work covered the whole field of practical surgery. He was the first to resect the liver, and it is only a few months ago that a memorial tablet commemorating that achievement was placed in the hall of the University of Bologna. His published works include papers on a new method of perineal cystotomy, a new method of treating aneurism, remote effects of contusions of the head, and many others. Bologna honored the deceased surgeon with a public funeral.—*London Med. Recorder*, Aug. 20, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 3 TO SEPTEMBER 9, 1889.

P. J. A. CLEARY, *Major and Surgeon.*—Is hereby granted leave of absence for two months, on surgeon's certificate of disability.—*S. O. 59, Headquarters Division of the Pacific, San Francisco, Cal.*, August 27, 1889.

With the approval of the Secretary of War, the leave of absence granted JOHN H. JANEWAY, *Major and Surgeon*, in S. O. 52, July 29, 1889, Division of the Pacific, is extended two months.—Par. 1, *S. O. 206, A. G. O.*, September 5, 1889.

By direction of the Secretary of War, a Board of Medical Officers, to consist of EDWARD P. VOLLUM, *Colonel and Surgeon;* HENRY MCELDERRY, *Major and Surgeon;* WASHINGTON MATTHEWS, *Major and Surgeon;* and JAMES C. MERRILL, *Captain and Assistant Surgeon*, is constituted, to meet in New York City, on the first day of October, 1889, or as soon thereafter as practicable, for the examination of Assistant Surgeons for promotion, and of candidates for admission into the Medical Corps of the Army. The Board will be governed in its proceedings by such instructions as it may receive from the Surgeon-General.—Par. 1, *S. O. 203, A. G. O.*, September 2, 1889.

EWING, CHARLES B., *Captain and Assistant Surgeon.*—Is granted leave of absence for twenty-one days, to commence on or about September 21, 1889, provided that at time the Post Surgeon, now on leave, has returned to duty.—Par. 5, *S. O. 201, Headquarters Division of the Atlantic, Governor's Island, New York City*, September 4, 1889.

The garrisons of Fort Laramie, Wyoming Territory; Fort Hays, Kansas, and Fort Lyon, Colorado, will be withdrawn, and the posts named will be abandoned as soon as it can be done with due regard to economy.—*G. O 69, A. G. O.*, August 31, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE TWO WEEKS ENDING SEPTEMBER 7, 1889.

NASH, F. S., *Passed Assistant Surgeon.*—Detached from the "Dale," and ordered to duty in the Bureau of Medicine and Surgery.

RUSSELL, A. C. H., *Passed Assistant Surgeon.*—Ordered to Naval Hospital, Yokohama, per steamer of September 28th.

HALL, C. H. H., *Passed Assistant Surgeon*—Detached from Naval Hospital, Yokohama, on reporting of relief, and return home.

WHITE, S. S., *Assistant Surgeon.*—Detached from Naval Hospital, New York, and ordered to the "Minnesota."

STONE, E. P., *Assistant Surgeon.*—Detached from the "Minnesota," and wait orders.

BRYANT, P. H., Detached from the "Ajax," and ordered to Naval Hospital, Norfolk, Virginia.

WENTWORTH, A. R., *Assistant Surgeon.*—Detached from Naval Hospital, Norfolk, Virginia, and wait orders.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, SEPTEMBER 21, 1889. NO. 12.

ORIGINAL ARTICLES.

RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF SOME DISEASES OF THE STOMACH.[1]

BY L. WOLFF, M.D.,

PHYSICIAN TO THE GERMAN HOSPITAL OF PHILADELPHIA; DEMONSTRATOR OF CHEMISTRY IN THE JEFFERSON MEDICAL COLLEGE, ETC.

THE pathological conditions of the stomach have, during the last few years, received a great deal of attention and consideration by medical investigators, with the result of placing them in a new light and a more rational position.

As pathological manifestations are but abnormal physiological functions, we will have to consider the normal gastric functions before proceeding to the abnormal.

It is a well-established fact that the stomach has distinct digestive power, and it is also well known that this is due to its secretions or to part thereof. While the secretive action of the stomach, in common with all mucous membranes, results in the production of mucus, the secretion of its acid digestive fluid from the peptic glands is one peculiar to this viscus alone, and to this product the name "gastric juice" is commonly given. That portion of the acid gastric juice which has a distinct influence on its digestive properties has been definitely shown by Carl Schmidt to be hydrochloric acid. The proteid ferment, which is made active only by this acid, is known as pepsin, and the result of its action on albuminoid food as peptone.

It has of late been questioned if the hydrochloric acid secreted by the peptic glands has only the power of rendering the pepsin active, and it is held by some (G. Bunge, *Lehrbuch der physiologischen und pathologischen Chemie*) that its principal value consists in rendering aseptic the ingested food, a fact which the attempt has been made to substantiate from the result of experiments which proved that 0.3 per cent. HCl prevented septic change in meat fibre, while the average normal gastric juice contained that amount of it. Normal gastric juice undoubtedly prevents and corrects effectually septic change of albuminoid food. Felix O. Cohn, in the *Zeitschrift für physiologische Chemie*, xiv., 1, July 29, 1889, ascertains that this is not attributable to the admixture of pepsin; that even small quantities of HCl prevent the formation of acetic acid, and that lactic fermentation is prevented by as much HCl as is necessary to convert into chlorides the phosphates necessary for the development of the bacillus acidi lactici. He also states that pepsin-hydrochloric acid has the same value to prevent fermentations as that without pepsin, and that HCl united with peptones fails to inhibit or prevent fermentation, and, as is already known, to digest albuminoid food. He further confirms Ewald's observation that HCl is probably secreted at once with the ingestion of food, but is imbibed by and united with the albuminoids, also with the bases and salts it unites with or displaces, and that during this period there is nothing to prevent other fermentations.

The question of the production of HCl in the peptic glands from the alkaline blood and fluids, is one that is of interest and value to gastric physiology. That HCl must necessarily result from the decomposition of the chlorides of the blood and liquids of the body is quite apparent. As sodium chloride is the principal one of these contained in the blood and lymph, and as these also hold in solution sodium bicarbonate, it may readily be inferred how sodium carbonate can form with liberation of hydrochloric acid, as per following formula:

$$NaCl + NaHCO_3 = Na_2CO_3 + HCl.$$

It is, undoubtedly, the characteristic secreting power of the epithelial cell to diffuse the products of this decomposition in a manner that the more alkaline salt will be returned to the blood, while the acid becomes part of the gastric secretion.

It is a peculiar fact that the peptic glands of the pyloric region, which distinguish themselves even macroscopically by their paler color, secrete alkaline fluids, which, however, when acidulated with HCl, have marked peptonizing power. When comparing the anatomical structure of the peptic glands of the pyloric and the non-pyloric region of the stomach, we find that the former have no ovoid, often called peptic, epithelial cells which we find in the tubules of the latter. It seems fair from this to deduce that the ovoid cells of the peptic glands secrete the HCl, as already pointed out by Heidenhain.

I have recently been able to arrive at similar deductions from experiments conducted with Dr. E. P. Davis at the Philadelphia Hospital. In a number of examinations of the gastric juice of normal infants no hydrochloric acid was found present therein,

[1] Read by invitation before the Atlantic County Medical Society, Atlantic City, N. J., September 4, 1889.

while coincident with my observations it was stated that the tubules of the peptic glands of the infantile stomach have no ovoid cells.

Ludwig and Ogata deduce from experiments on dogs on which resection of the entire stomach had been practised, as well as from some in which the pylorus had been occluded and the animals fed by a duodenal fistula, that the stomach was not absolutely necessary as far as digestion was concerned, either as a receptacle for food or as a generator of peptic fluids. Though these experiments of Czerny, Ludwig, and Ogata prove beyond doubt the possibility of nutrition without the stomach in the dog, the predigestion of food in the stomach is certainly indicated by the time it remains there, the changes it undergoes while there, and the absorption of peptonized food directly therefrom. That the stomach should only slowly rid itself of its chyme cannot possibly be only to the end of rendering it antiseptic by contact with its acid secretion, when the powerful peptonizing action of the chlorhydric solution of its secreted albuminoid principle is so well established. That different foods are much more readily acted on by the gastric juice and passed from the stomach, as shown by Beaumont, would also tend to establish the importance of gastric digestion for the nutritive process, even if impairment of the normal gastric digestion did not give rise to special pathological conditions quite characteristic as well as important in their effect upon the general nutrition of the human organism.

Before proceeding to the consideration of the typical diseases of the stomach, their pathology, diagnosis, and treatment, after having learned the special digestive function of the stomach, it is well first to study, as a general pathological condition, the perverted function which must arise more or less from all gastric disorders, and which, as an impairment or lack of the peptic act, is, therefore, termed "dyspepsia." Modern pathology recognizes the fact that gastric digestion is a purely chemical process due to various influences upon the secretory apparatus of the stomach, and the "chemical dyspepsia" has, as such, been proclaimed in the last three German Congresses for Internal Medicine, by von den Welden, Leube, Riegel, Ewald, Boas, Edinger, Jaworsky, etc.

Dyspepsia.

The chemical changes which take place in the stomach under abnormal conditions are the variable composition of the gastric secretion, owing to the increased, diminished, or totally absent quantity of hydrochloric acid, for so far no absence of pepsin has been established in any of the gastric secretions yet examined, and all of them have answered the physiological digestive test if admixed with hydrochloric acid.

The diagnosis of dyspepsia, as practised to-day, is the consequence of, and was developed from lavage of the stomach, as introduced by Kussmaul about twenty years ago, and the close investigation of the matter thus washed out. Previously the contents of the stomach and its secretions were judged principally from the vomited matter, but as this is a pathological product, it cannot give any correct idea of the possible functional ability of this organ. The ingesta, besides largely diluting the gastric secretion, make its chemical examination very uncertain and unreliable. The withdrawal of the gastric secretion when its digestive power is the greatest, is necessary at certain periods which have been ascertained by experiment and observation. This has to be done also at a time when the presence of ingested matter shall not render the withdrawal impossible. Without dwelling on the different experiments to ascertain this period, it is now generally accepted that a special meal should be given, after which, at a certain time, the gastric secretions are withdrawn. The early meal generally employed for this purpose is known as the trial breakfast, which consists of a few pieces, altogether about two to three ounces, of bread or bun and a glass of water or a cup of tea. Jaworsky and Gluzinski, relying on the observation that a soft-boiled egg disappears from the normal stomach in one and a half hours, use this instead of the above-mentioned trial breakfast. At times, however, and especially under pathological conditions, it is found that the egg is not peptonized in that period, and then, by clogging the tube and the now proven union of the free hydrochloric acid with the albuminoids, the withdrawal is rendered difficult and the results inaccurate. To obtain the gastric juice from four to five hours after a more copious "trial dinner" has no advantage, and the "trial breakfast," after all, is the one relied upon.

Ewald and Boas express the gastric juice by epigastric pressure, about one hour after the trial breakfast, when it is known that in the normal state it is strongly acid from hydrochloric acid, the lactic acid having disappeared, and only continuing to be present in abnormal conditions. To express the gastric juice has disadvantages which may be readily avoided by the use of a suction apparatus. Germain Sée recommends a Potain aspirator for this purpose, partial exhaustion only being made, but an ordinary syringe answers the purpose very well, as the quantity for chemical analysis need only be very small, from one to two drachms sufficing to that end. The tube employed for withdrawal of gastric juice is a small-sized, ordinary stomach-tube, having two fenestræ, and, in the cases of infants and children, I have frequently used simply a small, soft-rubber catheter.

After the introduction of the tube in the usual manner, the fluid is withdrawn by slowly drawing

out the piston of the syringe. A sufficient quantity is recognized by a small glass-tube connection in the rubber one; the tube is then carefully withdrawn and emptied into a small glass vessel. The liquid so obtained is next filtered and tested, to ascertain if acid or not, with neutral litmus paper. When the acidity is thus established, the amount of acidity is determined by acidimetry with a decinormal solution of sodium hydrate, litmus or phenolphthalein being used as indicator. Five cubic centimetres of the filtered gastric juice are neutralized with decinormal solution of soda, as stated above, and the total acidity is expressed by multiplying the result by twenty, thus giving the number of cubic centimetres of one-tenth normal soda solution necessary to neutralize one hundred cubic centimetres of gastric juice.

After this is done, the chemical character of the acid is investigated. To this end the lactic acid test of Uffelmann may be applied. This consists of a two per cent. solution of carbolic acid to which a few drops of neutral ferric chloride are added, sufficient to produce a steel-blue color. When this is added to some of the filtered gastric juice it will be decolorized if the acid is pure hydrochloric; if lactic acid is present together with hydrochloric, the color will be changed to a yellowish tint, and if the lactic acid is in excess, it may even assume a reddish-yellow; whereas, in the absence of hydrochloric acid, it will have a more greenish tint. Though this seems to answer the purpose, it only shows the presence of lactic acid, without giving a distinct idea as to the presence of hydrochloric acid.

For the purpose of showing the latter, Laborde proposed the use of methyl-violet; a watery solution of this is promptly changed by HCl to a greenish-blue color, but is not affected by lactic nor the fatty acids. It has, however, the disadvantage of being not sufficiently delicate, and the color-changes with weak acidulous fluids are not distinct enough to judge of small amounts of HCl. To test with it, some of the filtered gastric juice is placed in a small glass vessel (watch-crystal) placed upon white paper, and the test solution is allowed to drop on the side of the vessel and commingle with the fluid, when the change of color can be plainly observed against the white background. In a series of experiments to ascertain the limit of delicacy of these tests for HCl, I have found that the methyl-violet could detect in this manner 1 part of HCl in 2500 parts of water.

The next test, superior in delicacy, is a saturated aqueous solution of tropeolin; this yellow solution, when applied for the examination of gastric juice in the manner described for methyl-violet, will change to a beautiful red, or brownish-red with HCl, is but a little darkened by lactic acid, and very slightly so by the fatty acids. I have ascertained its limit of detection of HCl to be 1 to 3500, while 1 to 500 is the greatest dilution of lactic acid that will darken its color, and it is not affected by a 1 to 100 dilution of acetic acid.

A more recently introduced reagent is the phloroglucin-vanillin. Germain-Sée has made extensive experiments with this, and while it does not indicate organic acids, he claims for it a delicacy sufficient to indicate as little as 1 to 20,000 of HCl—a claim, however, which I have not been able to substantiate entirely from my own experiments.

It was found by Wiesner that if a pine stick was dipped into a phloroglucin solution, and was then touched with strong HCl, it turned a dark-red color. This reaction is caused by the presence of vanillin in the pine wood; and, therefore, this was substituted for it. The test is composed as follows: 2 grammes phloroglucin and 1 gramme vanillin dissolved in 30 grammes absolute alcohol. This yellowish solution gives at once with a stronger mineral acid a dark-red color with deposition of red crystals. To apply this test to weak acid solutions, such as the gastric juice, the fluid must be evaporated at a moderate heat, not reaching the boiling-point of water, to drive off the water and leave the HCl of sufficient strength to act on the reagent. To this end a few drops of the test are mixed with a similar quantity of the filtered secretion, and then slowly evaporated to dryness. If HCl is present the dry residue assumes a red color, or if present in very small quantity may show distinct red outlines only. In my hands this test, certainly a very valuable and delicate one, failed to indicate more than 1 part HCl in 10,000 parts.

The red Congo paper, as proposed by Prof. Riegel, is a most delicate reagent, and easy of application. It is readily turned of a bright greenish-blue color by HCl, but is also affected by lactic acid, which changes its color to a dark dirty-blue; and acetic acid will darken it with a bluish tinge. With this reagent, as obtained from Merck in Darmstadt, I was able to detect as little as 1 part of HCl in 20,000 parts of water; and while 1 part of acetic acid to 3000 water gave a slight change in color with bluish edges, 1 of this to 5000 did not affect it in any manner; 1 part of lactic acid in 5000 water was indicated by it in traces, but 1 to 6000 failed to elicit a change in its color.

It is thus seen that the latter is perhaps the most delicate reagent we have, not alone for HCl, but as an indicator of general acidity, and that when it fails to indicate the latter a total anacidity may be fairly claimed. When it indicates acidity, the application of the other tests may become necessary, not alone to ascertain the character of the acidity, but to approximate the degree to which HCl may be present in cases of subacidity. The gradation

and limits of these reagents, as pointed out by me, may be readily utilized to this end by dilution of the secretion up to the point where either of the above tests fail, and computing the HCl by the amount of the dilution.

The excess, normal presence, diminution, or absence of HCl being thus established, the digestive power of the gastric juice is now ascertained by the physiological test. To this end a small piece of coagulated egg albumen of about 7 mm. diameter and 1 mm. thickness is digested at the temperature of the body, and the comparative time necessary for its solution noted. With normal secretion this should be complete in from one to one and a half hours, whereas under abnormal conditions a much longer period and the addition of HCl may be required.

To classify the different phases of chemical dyspepsia, they can be conveniently arranged as hyperacidity, subacidity, and anacidity.

Hyperacidity is the overproduction of HCl by the peptic glands, the amount reaching as much as 0.4 to 0.6 per cent. of the peptic secretion. Its *etiology* seems still obscure, and may be attributed perhaps to the chemical condition of the blood, and to the concentric rather than peripheral stimulation of the secretory glands, and it is a fact that at times it is found irrespective of food ingestion. While its *symptoms* are quite characteristic, consisting of pyrosis, acid eructations which perceptibly affect the teeth, occasional vomiting, and ptyalism, under such conditions commonly termed water-brash, its *diagnosis* is readily made out with the tube and subsequent acidimetry, and confirming the character of the acid with methyl-violet, which is promptly changed to a distinct greenish-blue.

As a chemical indication for the *therapy* of acid dyspepsia or hyperacidity, alkalies must rank first and foremost; amongst them the sodium bicarbonate deserves principal consideration in massive doses of from 30 to 45 grains every four hours, and before meals. Alvine evacuations, which are more or less suppressed in this condition, should be freely promoted by Carlsbad salts, or by appropriate preparations of rhubarb in laxative doses. Hot potations, which are often lauded in this connection, have, in my experience, proven of little avail, but free lavage with borax or sodium bicarbonate solution gives the greatest relief. As physiologically indicated the diet should consist of proteid substances, while carbohydrates must be studiously avoided.

Subacidity. *Etiology.*—While in hyperacidity it was an excess of HCl which caused rather gastric distress than suppression of the peptic act, subacidity is generally observed in the catarrhal conditions of the gastric mucous membranes which are caused by improper food, excesses in drink or chemical irritants, and where, through irritation, the mucosa is hyperæmic and secreting abnormal quantities of alkaline mucus, diminishing the ostia of the peptic glands, and admixing the former with the gastric juice proper, thus preventing its proper action on the food-bolus. The common acute indigestions of our summer months, attributable to excessive drinking of iced beverages, belong to this class.

The *symptoms* are anorexia, thirst, slight fever, a sense of pressure and fulness in the epigastrium, occasional vomiting, and belching of gas, with eructations of fermenting food. A dry and coated tongue is generally observed in this condition, together with a bitter taste in the mouth. The bowels may be loose or bound, and by a progressive advance of the catarrhal process to the duodenum it may be followed by icteroid appearance.

Treatment.—This class of dyspepsia calls for rapid evacuation of the stomach, either by tube or emetic, followed by local sedatives, such as bismuth and soda; while after subsidence of the mucous hyperæmia and a continuance of subacidity, ten to fifteen drops of dilute HCl in water prove of service given after food. During the febrile stage small pieces of ice by the mouth and iced milk diluted with some effervescent alkaline mineral waters prove most grateful and serviceable.

Chronic Gastric Catarrh.

The persistence or frequent repetition of ingestion of the causative elements of the acute gastric catarrh cause a chronic state commonly met with in subjects, termed "chronic dyspeptics," and, as the chronic gastric catarrh, is the cause of subacid disturbances of the digestive function. This may be, and often really is, gastro-enteritis; and, again, it is dependent at times upon other diseases and, therefore, only secondary in character. The cause of disturbance of the chemical composition of the gastric secretion hence must be looked for either in the altered chemical composition of the blood or in the changed anatomical relations of the glands.

The gastric mucous membrane in this affection is heavily coated with a grayish-white material, consisting largely of cast-off epithelium; the odor from the buccal cavity is, from this cause, more or less offensive, and the mucosa beneath the coating is red and hyperæmic. According to the stage of its existence, the mucous surfaces may be smooth or atrophic, and there may be an accompanying atrophy of the peptic glands and an increase of connective tissue between them. Not infrequently hyperplasia of the mucosa exists, diminishing the ostia of the peptic glands, the hyperplasia extending at times even to the submucous tissue.

The main result of these anatomical changes consists in the reduction of the amount of HCl in the secretion, and with it the diminished digestive power and an insufficient inhibition of bacterial develop-

ment, in consequence of which fermentation of the ingesta ensues, with copious eructation of gases and the formation of lactic, acetic, and other acids. In cases where the absence of HCl is very marked, the fermentative processes may cause vomiting, and the ejecta will often reveal to microscopic inspection yeast fungi and sarcinæ ventriculi, which are, however, of no special pathological consequence.

A feature of the chronic gastric catarrh is the impaired peristalsis of the stomach. This is dependent on the diminished amount of HCl present, as we know that in the normal stomach this acid is the principal exciting cause of gastric peristalsis. In consequence thereof dilatation results, and the degree of subacidity becomes more and more marked until almost entire anacidity prevails, as I had occasion to observe in several instances of chronic gastric catarrh during a recent investigation of a series of cases of this kind at the German Hospital of Philadelphia, made by myself and the medical resi dent, Dr. Gerlach.

As the physical examination of the stomach offers no characteristic points for *diagnosis*, the latter cannot well be established without the chemical examination, together with due consideration of the subjective and objective symptoms and exclusion of such pathological conditions which stamp the dyspepsia as secondary to some other affection.

The *treatment* of the chronic catarrh of the stomach as a primary affection should be largely dietetic, avoiding all food that is irritant, bulky, or slowly acted on by the gastric secretions. Thus, carbohydrates should be avoided, also fats, and principally alcoholic beverages. Milk, broths with raw eggs broken and stirred into them, and toast, should, in severe cases, constitute the principal food. As the tardy gastric digestion will favor fermentative changes, which in turn act as irritants and favor the accumulation of mucous secretion, the removal of undigested food, together with such bacteria as would incite decomposition *de novo* in freshly added food, is indicated in all such cases, and calls for mechanical treatment by lavage, which, though little practised in this country so far, has often worked wonders with chronic dyspeptics.

Amongst the remedial agents the chemical indication for the use of HCl would certainly be foremost, to correct the subacidity and promote the peptic process. When lavage is practised this indication will generally hold good, but when the milder symptoms do not indicate the use of the tube it will do no good. The reason for this is the large amount of mucus which is coagulated by the acid, and by enveloping the food particles prevents them from being acted upon by the gastric secretions. In these cases the alkalies, and among them the sodium bicarbonate, should be used, together with the vegetable bitters to excite active secretion; of these the tinc. gentian. comp., tinct. nucis vomic., tinct. colombo, etc., will prove of good service. Gastric antiseptics and antiferments can hardly be administered in sufficient quantity to do good, and very few, if any, are germicidal enough to correct an already fermented food-bolus. The constipation, sometimes so marked in these cases, is best overcome by Carlsbad salts or by some of the laxative mineral waters, or in more obstinate cases by pil. rhei comp.

Nervous Dyspepsia.

The influence of the nervous system upon the gastric digestion has been regarded as of great importance and has led to the special classification of "nervous dyspepsia."

That the innervation of the stomach may influence the gastric secretion, and that hyperacidity or subacidity may thus arise, is not to be doubted, but that special nerve influence could pervert the chemical act of digestion with normal secretion in the stomach any more than in the retort is not reasonable. The only neuroses appreciable to our present state of knowledge must be those of either sensory or motor disturbances. The reflexes causing intense neuralgic pains of the stomach may depend primarily upon perverted digestion, with or without motor implication, and are, as such, known as "gastralgia." In neurotic patients they may develop, even without peptic disturbances, from external influences upon a morbid mind; but that with normal gastric secretion, the chymification of food should be interfered with by nerve influence can only be explained by the interference of reflexes with the motor innervation—*i. e.*, gastric peristalsis—accompanied either by pain or emesis, or both. The many subjective symptoms of the so-called "nervous dyspepsia" are certainly pure psychoses and cannot be classed with gastric diseases. It is doubtful if migraine is of gastric origin or due to intestinal indigestion, and also if the gastric neuroses, such as vertigo, etc., do not all, more or less, arise from this source.

The *treatment* of the neuroses of the stomach, as indicated by the character of the affection, must be either anæsthetic or else directed to the motor innervation. In the pure gastralgias, morphine hypodermatically will prove all that is requisite; in increased peristalsis with convulsive contractions and vomiting the bromides or chloral, or both, will meet the issue, while in atony of the muscularis nothing will prove as serviceable as nux vomica, calisthenics and the cold douche or surf-bathing. The subjective symptoms and psychoses, electing the gastric function for the toy of a morbid mental state, will yield to moral treatment and proper hygienic conditions if at all, but not to pepsin and kindred medication.

ULCER OF THE STOMACH.

Of the gastric diseases not directly arising from perverted peptic function, but at times seriously affecting it, is ulcer of the stomach.

The *etiology* of this disease is as yet obscure, although experimentally it has been produced by embolic processes of the vessels of the gastric mucous membrane. Though its primary cause is not known or to a certainty proven by the experiments mentioned, there seems to be no doubt that it is indirectly caused by autodigestion of the affected portion of the stomach. The fact that the normal stomach resists the digestive power of its secretions has been variously attributed to the alkalinity of the blood circulating through it and, also, to the vital resistance of the living tissue against the chemical process. The latter seems such a speculative assumption, based upon an absolutely undefined factor, that it might be far better to adhere to the more rational theory, which is certainly substantiated by experiment and the observation that the dead stomach as well as that cut off from circulation, digests itself.

The gastric ulcer is of circular outline and spreads as well to the periphery as to the fundus, so that with clean-cut edges it narrows down to a funnel shape. The fact that it is generally clean is due to the erosive action of the peptic secretion; it may be superficial only, or reach the muscular and serous coats, even perforating the viscus entirely. While generally solitary, it is multiple at times, and, though principally met with in the pyloric region, it is also occasionally found in the lesser curvature and, as a rule, on the posterior wall, which accounts for the agglutination of the stomach in such affections with neighboring viscera. The ulcerative process and erosion may affect smaller or larger vessels and thus give rise to the characteristic hæmatemesis.

Symptoms.—Though ulcus ventriculi may not in all cases be accompanied by characteristic symptoms, there are a large number of cases which exhibit phenomena to warrant suspicion of the existence of ulcer. Of these, localized pain is, perhaps, the earliest, with gastric irritability and, probably, vomiting. The pain may be localized or diffused, or of a neuralgic character, referred to the epigastrium or back, or radiating; it is often relieved by a change of position, and, if this results from recumbency on the left side, its location is most probably in the pylorus. The localized pain increases with ingestion of coarse food, and, if found circumscribed on pressure, this would also form an important factor in the diagnosis. Though the emesis accompanying these subjective manifestations is of some additional diagnostic value, it is by no means a frequent concomitant and not characteristic of ulcer, unless accompanied by blood in sufficient quantity to stamp it as hæmatemesis.

The blood from erosion of a vessel by gastric ulcer is, however, not always ejected from the stomach, but appears at times in the dejecta, imparting to them a dark and tarry appearance. The vomited blood is generally clotted, mixed with food particles, and acid reaction in contradistinction to the light, frothy-looking blood of hæmoptysis. Gastric hemorrhage may range from a few ounces to several pints, and, when very copious, may be, and occasionally is, the cause of fatal results. The dyspeptic symptoms of gastric ulcer are of no diagnostic value, and arise from accompanying conditions rather than the disease itself; but a most general symptom connected with it is the hyperacidity described by Riegel, and since confirmed by others; this is of great importance in the indication for treatment.

The *prognosis* of ulcer of the stomach may be said to be favorable in the majority of cases, as to direct results. The indirect sequel from cicatricial stenosis of the pylorus we will consider under the head of dilatation. The incidental perforation or exsanguination are factors which make the prognosis very grave, if not necessarily fatal, but fortunately arise in isolated instances only.

The *therapy* of ulcer of the stomach, as indicated by its pathology, would preclude, before all, the ingestion of solid food and, in fact, of anything that would excite or promote peptic secretion. I consider milk diet in such cases with hyperacidity as little calculated to benefit the patient, as the firm coagula of acid casein not only stimulate peptic secretion but offer great resistance to gastric peristalsis and still further obstacles to subsequent pancreatic digestion, thereby causing intestinal indigestion and thus defeating the very object of nutrition. Broths, with raw eggs broken and stirred into them, which are capable of uniting with free hydrochloric acid and of diminishing the peptic power of the free acid, as recently proven by Felix O. Cohn, offer certainly a more rational diet, readily digested and assimilated. I have succeeded better with total abstinence from food and rectal alimentation than by any other method. Thirst is to be quenched with ice, pain controlled by morphine hypodermatically, while the hyperacidity is overcome by sodium bicarbonate in massive doses.

Absolute rest is of utmost importance both physically, mentally, and as a matter of course as far as the stomach is concerned. Hot fomentations to the epigastrium arrest paroxysms of pain, while ice-pills per os and the ice-bag locally will assist in the treatment for hemorrhage. The latter is best combated by hypodermatic injections of ergotin or scruple doses of gallic acid frequently repeated. Nausea and vomiting are met with ice-pills, chloral, creasote, or Lugol's solution. Perforation and the results therefrom may possibly be benefited by surgical treat-

ment, but too little as yet is known regarding this to base much hope on its success.

DILATATION OF THE STOMACH.

Dilatation of the stomach is a pathological condition generally, if not probably always, accompanied by subacidity, and in a large number of cases with anacidity.

Only a minority of cases of this kind are primary dilatation—*i. e.*, that do not depend upon some other morbid affection of the stomach; the majority are secondary, in so far that they are consequent upon stenosis of the pylorus, which in turn may be either benign or malignant—the former arising from cicatricial contraction after ulcer, the latter due to the presence of carcinoma in that region. There may be also stenosis from mechanical pressure of near-lying tumors (floating kidney, Bartels), which, in turn, like all obstructions in that locality, occasion dilatation of the stomach.

Gastric dilatation without pyloric obstruction is sometimes noted in, and consequent upon, chronic catarrh of the stomach, but never occurs then in that degree as in the variety resulting from the former cause. It depends upon paresis of the muscular coat resulting from general debility or overdistention by ingested matter, and is frequently noted in those who indulge to excess in the pleasures of the table and the cup. I have had occasion to observe it more in connection with the chronic gastric catarrh of beer-drinkers than of any other class of patients, and it is also claimed to be frequently found among diabetics.

The *pathology* of gastric dilatation is to be considered as similar to that of cardiac dilatation in aortic obstruction. The muscular fibres of the stomach, to overcome the pyloric constriction, first become hypertrophied; the accumulation of food soon produces paresis of the muscular coat and dilatation results, which increases in the same measure as the chemical peptic act is diminished, and the fermentative changes of the food-bolus produce irritation and inflammation of the mucosa. The latter, under such conditions, fails to secrete a sufficient amount of hydrochloric acid, which is the excitant to gastric peristalsis. As a consequence of overdistention, the mucous coat suffers anatomical changes, the ostia of the peptic glands—which at first appear almost hypertrophied and extend beyond the surface of the mucosa—soon atrophy, and with it the secreting power of the gland becomes less and less.

It was thought at one time that anacidity was pathognomonic of gastric carcinoma, but that has been certainly disproven, and it can only be possible when pyloric cancer, and consequent obstruction, produces dilatation of the stomach. Any considerable dilatation must necessarily result in subacidity, and if existing for some time and in increasing ratio, or from complete pyloric stenosis, it must result in anacidity. This has been disputed and HCl has been claimed as being present in not merely distended stomachs but also in the overdistention or complete dilatation from pyloric obstruction, but it seems unlikely, and when we consider the diagnostic difficulties for defining distention, or even sometimes complete dilatation, the error may be readily looked for rather in the diagnosis than in the pathological condition. We may justly assume that anacidity is not a symptom accompanying any special gastric disease, but in all probability always results from complete dilatation from whatever cause this may happen. While in the functional anacidity from gastric catarrh, etc., this may exist for the time being and is, no doubt, also the result of dilatation, it being a paresis of the muscular coat rather than a paralysis of the fibre as in complete dilatation, the chemical character of the gastric secretion can be restored by a removal of the vicious element.

The *symptoms* of gastric ectasis are those of apepsia generally, anorexia, gastric pressure, eructations, pyrosis, and vomiting. The latter is somewhat characteristic, as it takes place at longer intervals only, when the ectasis has assumed great proportions and fermentative changes exert their irritation upon the mucous membrane. According to the amount and quality of food taken, it may happen only once in twenty-four hours, or in three to four days and even longer periods. My friend Dr. J. M. Barton ingeniously ascertains the number of meals comprised in the emetic act under such conditions, by giving a number of raisins with each meal and counting their number when rejected from the stomach. To arrive at the degree of stenosis he gives both raisins and a few currants. If the latter are not ejected in the vomit he concludes very justly that the pylorus is partly pervious and deduces the amount of constriction from the size of the currants. The ejected matter is usually copious, is readily vomited without much nausea or straining, and patients feel a great sense of relief after it.

The *diagnosis* is not always as readily arrived at as might be judged from the number of mechanical means for this purpose. The objective examination by palpation and percussion leads in well-marked cases at times easily to a satisfactory conclusion, especially if the stomach is filled by fluids or gases. To that end it is often of great service to give in different potions about thirty grains of sodium bicarbonate and tartaric acid, when, as a rule, the inflated stomach may be palpated with facility. If, in addition to this, a quantity of water, about eight to twelve ounces, is swallowed and the line of dulness by percussion is located below the umbilicus, the diagnosis is pretty certain. Adhesions from perforating ulcer or carcinoma may, however, embar-

rass the result under such circumstances. Perhaps the most satisfactory method for ascertaining the capacity of the dilated stomach in complete pyloric stenosis is to fill the stomach with water through the tube and to measure the fluid as siphoned out therefrom. In atonic dilatation or with perforating ulcer or carcinoma this, also, is valueless. The examination of the stomach for dilatation by means of the sound does not possess the value claimed for it, as displacement of the viscus may simulate the pathological condition in question.

The general condition of the patient suffering from gastric ectasis is always more or less impaired; emaciation rapidly takes place; the bowels are obstinately constipated and will not be open for days and weeks; the urine is generally small in quantity and of neutral or alkaline reaction. The total absence of hydrochloric acid from the stomach in connection with the other symptoms above enumerated would certainly point very strongly toward an existing dilatation as probably arising from pyloric obstruction. Functional dilatation may be accompanied by subacidity, and in these cases the existence of dilatation together with the degree of ectasis can be arrived at satisfactorily only in a minority of the cases.

The *prognosis* of atonic or functional dilatation of the stomach may be viewed as favorable—*i. e.*, readily yielding to proper therapy. Gastric ectasis from cicatricial pyloric stenosis is more serious, but with proper management much can be done toward keeping up nutrition and preserving life. The recent operative treatment in this condition, as practised by Loreta in Italy, and Bull and Barton in this country, has been so successful that a great future may be promised for it. The prognosis of dilatation from carcinomatous stenosis of the pylorus is most unfavorable, though pylorectomy has produced some favorable results.

The *treatment* for atonic gastric ectasis is one that depends largely on a proper diet. Albuminous substances, such as eggs, broths, or scraped meat, should be freely exhibited, followed by dilute hydrochloric acid with strychnine or nux vomica. Carbohydrates should be prohibited, nor should milk or other beverages be taken in quantities; saline laxatives are best indicated to keep the bowels solvent; the faradic current applied to the epigastrium will prove of vast value; the catarrhal condition should receive attention, as pointed out under that head.

In the graver or secondary dilatation the treatment must depend upon the removal of the accumulated food by means of the stomach tube and the daily repeated lavage. While the pyloric stenosis is not directly benefited by this, the hyperæmia and œdema accompanying it can be much relieved by this treatment. In a case now under my care in the German Hospital, complete stenosis no doubt existed; no alvine dejecta had passed for about two months, all of the food taken was vomited at intervals of from one to two days; the patient's weight from 156 pounds sank to 89 pounds, and corresponding debility was manifest. By frequent lavage and the administration of albuminoid food with HCl, and nutritive enemata of carbohydrates (glucose), the patient gained in strength and weight. At one time during the treatment he washed out through the tube an apple-seed, though he had not eaten apples for two months past. Alvine discharges soon became regular, and are now formed, while the patient's weight to-day is 129 pounds.

Though I do not regard the stenosis in this case as cured, the obstruction arising from congestion or œdema must have been certainly relieved to admit of good gastric digestion, and the dilatation has undoubtedly been improved, as the gastric secretion is beginning to show traces of HCl, and the patient has appetite and digests food without medicinal aid.

That all of these cases should ultimately be treated in a surgical way, I fully believe, and when I consider the good result achieved Dr. Barton in his recent case, patients should be encougaged to that end. Much, however, can be done medically to relieve the patient, and this should be exhausted or done preparatory to operative interference. It has been my habit in such cases to wash out the stomach daily with 3 to 4 pints of a dilute solution of borax, to give broths with egg and scraped beef as nourishment, followed by HCl with nux vomica; and to administer enemata of from 4 to 6 ounces of glucose thinned with a little warm water and admixed with ½ to 1 ounce of beef peptones.

In the dilatation depending upon carcinomatous stricture of the pylorus, little is to be hoped from treatment of any kind other than intended to palliate the pain and relieve the most urgent symptoms.

Cancer of the Stomach.

Cancer of the stomach is the gravest and most fatal of all gastric affections. The *etiology*, like that of all malignant neoplasms, is entirely obscure in this affection as well, and though Hauser called attention to the atypical epithelium arising from cicatrices of gastric ulcer, no direct connection between the two has as yet been established. It occurs generally between the ages of forty and sixty, but much younger persons are found suffering from it at times; the hereditary tendency has been received with some credence; the duration may be from one to two years, rarely more.

Gastric carcinomata are quite frequent, and it is claimed that they comprise about one-third of the total number of malignant growths. They occur more generally in the pyloric region, next frequently in the lesser curvature, but are also found in the fundus and cardia. Arising from the mucous

coat they present either as circumscribed tumors or diffuse infiltrations progressing to the submucous and muscular coats, and are sometimes the cause of adhesions to neighboring viscera. The scirrhous, medullary, and colloidal are the principal varieties observed; they are, as a rule, in the advanced state, broken down on their surface, which is clean, owing to the digestive action of the peptic secretion.

Symptoms.—Their effect upon the patient marks a steadily downward course, leading to rapid emaciation, cachexia, and anæmia; the dyspeptic symptoms are not always alike, but are probably the first to occasion complaint—consisting of anorexia, gastric pressure increasing to pain, and in many cases, but not in all, there is characteristic vomiting. Hæmatemesis is perhaps more frequent, but not nearly as copious as in ulcer, and the small quantities of blood are generally reduced to hæmatin, which gives the ejected matter the appearance of coffee-grounds. To confirm the presence of blood the hæmin test should be made, and the Teichmann's crystals of hæmatin hydrochloride developed for microscopic recognition. The vomited matter rarely, if ever, shows cancer cells or particles characteristic of cancerous structure, and the sarcinæ, etc., are seen, as in other cases of dilatation or apepsia.

An important symptom accompanying many cases of gastric carcinoma is the anacidity frequently observed in connection with it. While it was held by von den Welden that this is characteristic of cancer of the stomach, it was found that in some cases of carcinoma there was not alone no anacidity, but even hyperacidity. The ingenious experiments of Riegel, which demonstrated the impairment of normal gastric juice by the proteid character of carcinomatous fluids, are negatived by the recent experiments, which show that all albuminous substances will cause the same result. In my opinion only such cases of gastric cancer can produce anacidity as cause pyloric stenosis and dilatation in consequence thereof; and that carcinomatous disease in other parts of the stomach may not only not diminish the HCl acidity of the gastric secretion, but like gastric ulcer may actually increase it—an important point in the diagnosis of location.

The palpation of the stomach leads often to the *diagnosis* of tumescence directly attributable to malignant disease, but the absence of tumescence is by no means a proof of the non-existence of the former. Percussion of the stomach is of little, if any, positive diagnostic value. The alvine discharges are much inhibited in the pyloric obstruction from cancer, but otherwise offer no diagnostic points, nor does the urine. The heart and pulse bear the general character of anæmia and inanition, but have no other bearing on the pathological condition.

As we have already indicated, the *treatment* of gastric carcinoma can at best be one intended to palliate the suffering and meet the symptoms. These latter have been already referred to in the treatment of dilatation from pyloric obstruction, to which should be added morphine hypodermatically for pain; and for the obstinate vomiting, ice, chloral, creasote, or Lugol's solution. Lavage must here also be the sheet-anchor; proteid diet, rectal alimentation, and supporting treatment of all kinds, and stimulants, especially effervescent wines, are about the only means to prolong the existence of suffering to which these patients seem condemned.

It is as yet a matter of doubt if operative interference in pyloric carcinomata will prove of great value. That some of the cases so treated have done well throws out a ray of hope, which, even if it does not realize curative results, for a time relieves the sufferings incidental to this disease.

333 SOUTH TWELFTH ST., PHILADELPHIA.

SOME THOUGHTS ON SURGICAL SHOCK, WITH SPECIAL REFERENCE TO BRAIN AND SPINAL OPERATIONS.

BY F. X. DERCUM, M.D.,

INSTRUCTOR IN NERVOUS DISEASES, UNIVERSITY OF PENNSYLVANIA; NEUROLOGIST TO THE PHILADELPHIA HOSPITAL.

THE writer has had the opportunity of witnessing many of the remarkable brain and spinal operations lately performed in Philadelphia, and the following thoughts have arisen as a result of this experience. It is not intended to encroach upon the field belonging properly to the surgeon, but merely to make a few suggestions that may possibly be of value in the desperate cases occasionally submitted to the knife.

Observation shows that operations upon the cerebrum, the cerebellum, and the cord are, as a rule, attended by the most profound shock. Evidently this shock is the greatest danger which the surgeon has to meet. Indeed, in the various fatal cases which the writer has seen, it was the chief, if not the only, cause of death. It is so formidable that every resource at our command should be exhausted to meet it; nothing should be neglected. In some cases a hair might turn the scale, and it is for this reason that the following suggestions are made.

With regard to the special preparation of the patient the judgment and experience of the surgeon should be deferred to. I should like, however, to direct attention to a point the value of which was long ago recognized by Travers[1] and which was more recently reiterated by Jordan.[2] It is to place the patient in a condition of rest and quiet by putting him to bed for several days or a week before the operation. This method appears to me to be of really great value. Certainly it promises to diminish the general nervousness and irritability of the patient. It promises to calm and steady and to im-

[1] Travers: Constitutional Irritation, 1827.

[2] Jordan: Hastings' essay, on Shock.

prove all of the various functions. While it soothes, it at the same time elevates the general level of vitality and in a measure simulates a brief course of rest-cure.

Further, by being in bed the patient gradually becomes accustomed to the idea of being sick. Even the thought of the operation becomes more and more familiar, and, under the toning influence of a properly trained nurse, loses more than half its terrors. Again, these preliminaries give abundant opportunity for a cheerful acquaintance with the surgeon and permit a grateful confidence to spring up in the heart of the patient. By this means, the psychic element of shock, so potent for ill, and which, I fear, frequently receives too little consideration, may be largely diminished.

According to circumstances, the rest-cure may be still further simulated by the addition of massage and even of faradism. Forced feeding to within twenty-four or forty-eight hours of the operation may also be carried out. Strict isolation is, of course, uncalled for, but emotional friends and relatives should be excluded. No one should be permitted to see the patient unless by the consent of the doctor or a responsible nurse. To patients who have been for some time bedridden, and to those in whom from the very nature of their affection the general nervous tone has become much depressed, these suggestions are especially applicable.

Turning now to the immediate prophylaxis of shock, it has occurred to me that the hypodermatic injection of strychnia just before the operation would be of value. I am not aware that this use of strychnia has thus far been advocated. To some extent, but much less than it should be, it has been used in the treatment of the fully established shock. Evidently if shock be due, as there is every reason to believe, to a more or less marked general paralysis of the nervous system, strychnia is strongly indicated. It is its use as a prophylactic to which I especially desire to call attention.

I would suggest that it be used somewhat as follows: According to the nature of the operation, one twentieth to one-tenth of a grain of the sulphate should be injected just as full etherization is reached. Should the operation be excessively prolonged or should shock of great intensity be developed, the dose should be repeated. Its use subsequent to the operation must be governed by the condition of the patient and by the amount already administered.

There can be no doubt that a tolerance to the action of strychnia is to some extent established in shock and that relatively massive doses will be well borne. I should regard one-fifth or one-fourth of a grain in divided doses distributed over several hours as perfectly safe. It is not improbable that in very profound shock even more might be borne.

Its use and its dose previous to the operation must, of course, depend upon the character and probable extent of the latter. In relatively simple procedures it may very properly be omitted, and, if necessary, administered during, or subsequent to, the operation, as the indications arise. For instance, its use is not strongly indicated in interference with the cortex in the frontal or motor regions; provided, of course, that the interference be not too extensive. Observation inclines me to the view that the shock following operations upon the cerebro-spinal axis deepens as we go from the frontal regions of the brain backward to the occipital lobes; further, that it is still deeper in the cerebellum, and reaches its acme of intensity in the cord. If this be true, a ready rule is furnished not only for the use but also for the dosage of strychnia.

It is difficult, finally, to conceive of any condition in which it could possibly be of harm, and only in positively reckless hands could there be any danger whatever.

With regard to the matter of etherization, there can be no doubt that the too free administration of ether is not infrequently harmful and it is very probable that it occasionally plays no insignificant part in the collapse of the patient. The rule that only the minimum quantity of ether necessary to produce and maintain anæsthesia should be used, is to be observed with all possible strictness. In a desperate case this may be one of the apparently unimportant measures that may determine the successful issue, and if possible the services of some one especially skilled in the administration of anæsthetics should be secured.

Passing now to the management of the fully established shock we think at once, in addition to strychnia, of the various cardiac stimulants, alcohol, digitalis, and ammonia. With regard to the use of these drugs I shall have but little to say, as I have elsewhere[1] considered them to some extent.

Alcohol is, of course, of the greatest value, but, as a rule, the patient is nauseated after the operation and unable to retain it, even when mixed with carbonated water or administered in the form of champagne. Hypodermatically it must give way in point of value to digitalis.

If the symptoms of heart failure be at all pronounced, digitalis should be given, and in doses large enough and repeated with sufficient frequency to produce an appreciable effect on the pulse. As in the case of strychnia, there is established in profound shock a tolerance of digitalis so that the latter may be administered in quite large doses. A half drachm of the tincture every half-hour has been

[1] Railroad Shock and its Treatment. Annual address before the Lehigh Valley Medical Society, Aug. 16, 1889. Therapeutic Gazette. (In press.)

given for four hours with the result of saving life.[1] Hypodermatically, ten to fifteen minims should be given, repeated every twenty minutes, until some response is detected in the pulse.

Of ammonia as a remedy in shock I entertain but a poor opinion. Its action is altogether too fleeting, and if used at all it should only be as an adjuvant to the other remedies.

There is, however, one drug that, judging from every indication, should be of especial value, and which, strange to say, is almost unappreciated. It certainly is by far too little resorted to. I speak of musk. Musk—that is, the genuine drug—is not readily obtained and is very expensive, but there is no other drug that promises so much. It acts as a gentle and sustaining stimulant to the nerve centres. It calms and steadies. It quiets the restlessness of the patient, allays the vomiting, and arrests the distressing hiccough. It should be administered after the manner recommended by Dr. H. C. Wood—namely, suspended in a little thin mucilage and by the rectum. In shock, of course, the dose should be relatively large, say fifteen to twenty grains; and a little laudanum, say fifteen drops, may be added with advantage. Opium in full doses, however, should rather be avoided, even in extreme restlessness, as there is good reason to believe that in shock the resistance to opium is much diminished. Exceptionally its use may be counselled, but never without risk.

Another remedy of undoubted usefulness in shock is atropia. As well known, it is a respiratory stimulant and also a stimulant to the vaso-motor nerve centres in general. The patient is, as a rule, bathed in a profuse and exhausting sweat, and in such a case atropia is especially indicated. One-sixtieth of a grain should be given, and repeated, if at all, in diminished dose and at relatively long intervals.

However, one of the most striking and most dangerous symptoms of shock still remains to be combated, and that is, the fall of temperature. The moment we touch the patient we realize how very cold he is—cold and damp. It is always very marked; sometimes the temperature falls as low as 95°.[2] Application of external heat is of the utmost consequence. However, the amount of good accomplished by such appliances as cans and bottles of hot water is very limited. Their action is confined to but small extents of surface, and the effect on the body temperature as a whole is very meagre. The hot bath, which may be resorted to in desperate cases, is very objectionable; first, because it necessitates a large amount of handling of the patient; secondly, because in some cases it may interfere with the dressings; and lastly, because the heat applied is moist and not dry heat. It is preëminently necessary that the heat should be *dry* heat, and the problem arises: By what means can dry heat be applied to a large extent of surface and without inconvenience to the patient?

Some time ago I was called to a patient in collapse during an attack of pleurisy. The temperature had fallen to 96.5° and the general condition was alarming.[1] I at once procured an ordinary hospital water-bed, such as is used for fractures and dislocations of the spine. It was filled with hot water, covered by several layers of flannel blankets, and the patient placed upon it. In a short time reaction set in, and the temperature rose to a little above normal. The result was, indeed, gratifying in the extreme. Certainly no other method promises to yield such excellent and immediate results, and, it seems to me, that in desperate surgical procedures in which profound shock may be expected, the hot-water bed should be kept in readiness and the patient placed upon it as soon as the operation has been completed. Should it be too hot, extra layers of blankets may be first applied. With care, however, and the exercise of a little judgment, a proper temperature may easily be obtained.

Let us suppose, now, that the surgeon is about to perform a serious operation, say trephining of the spinal canal with possible opening up of the dura. How shall he proceed? Let us rehearse a moment the steps that he would take. First, the preliminary rest should be undertaken according to circumstances, as pointed out; secondly, excessive care is to be used in the administration of ether; thirdly, etherization being complete, one-tenth of a grain of strychnia is to be injected hypodermatically, and repeated, if necessary, in the manner suggested; fourthly, the operation being complete, and the shock established, the patient is to be at once transferred to the previously prepared hot-water bed, the head being maintained a little lower than the body. Shock continuing unabated, digitalis and atropia are next to be used hypodermatically, and at the same time musk is to be injected, as suggested, into the bowel. If the latter is not to be obtained, warm strong black coffee is to be used in its stead.

The hypodermatic injection of ether I do not believe to possess much utility. If it acts at all, it must be in a reflex way by the local irritation it produces.

The above thoughts are expressed with all deference to the experience of surgeons, and are thrown out merely as suggestions. Should they result in increasing the percentage of recoveries by ever so small an amount, the writer will feel amply repaid.

[1] Lauder Brunton: Shock and Syncope: the case of Wilkes.
[2] Cheever: Boston Med. and Surg. Journal, 1888, cxix. 293.

[1] Also mentioned in address before referred to. Loc. cit.

THE MINERAL SPRINGS OF COLORADO.[1]

BY CHARLES DENISON, M.D.,
OF DENVER, COLORADO.

(Concluded from page 290)

THE CLIMATE

of Idaho Springs is decidedly stimulating, bracing, and exciting. Like most mountain regions of its altitude, there is an electrical condition of the atmosphere accompanied by high tension and excess of ozone. In these regards, as well as in the greater fickleness of the winds, and the usual lower average temperature, it differs from the climate of the "plains," over 2000 feet below. Otherwise there is a great similarity; that is, as to the uniformly dry atmosphere, the usual gentleness of the wind, and the marked predominance of sunshine over cloudiness. Many residents in the mountains claim that the summers are cooler and the winters warmer than out on "the valley," as the level country along the eastern base of the Rocky Mountains is sometimes called. Since this claim has to be admitted for the summer temperatures, it cannot be so for the winters, because the annual mean for Denver is 49.2° and for Idaho Springs, 45° F. The winters in the mountains may be warmer in proportion to the summers there, but not enough so more than to neutralize the annual difference between Idaho Springs and Denver, of 4.2 degrees.

This is the average of two years' observations at hand, taken by Mr. I. Zeller and Mr. C. E. Barber, of Idaho Springs. While the annual mean for Idaho Springs is four and a half degrees colder than that of Denver, it is only two degrees colder than the average for Manitou.

It is well to remember, when speaking of the average temperatures of such elevated places, that the rule for computing them, as practised by the Signal Service Bureau, involves an injustice, so to speak, to the day-time records, when people are out of doors, in that the cold 9 P.M. observation is doubled and then added to the cold 7 A.M., and the one warm 2 P.M. observation, and the sum divided by four, to get the daily mean. The greater the elevation above the sea, the more is this inconsistency apparent, especially in mountainous sections, where the towns located in the valleys do not begin to feel the sun's influence till after the morning observation at 7 o'clock. There is not so much discomfort in living in the mountains as the record would indicate.

In considering the climate of Idaho Springs, it is important to note a peculiarity in the environment of the place. The town lies nearly in the centre of a loop, open toward the east, made by a considerable curve of the main range of the Rocky Mountain chain. There is a certain protection from this lofty ridge, though it be twenty miles away, in that many of the strong winds which sweep over the mountains, the southerly and northerly more especially, are deflected to one side or prevented from descending to the valley. Mr. Barber, the observer there, has noted this effect. He has often seen that at the same time the upper clouds would be passing rapidly to the north or south, the moving of the foliage on the mountains would indicate another direction of the wind, while down in the town a light breeze would be blowing in still another direction either east or west—*i. e.*, in the direction of the valley. There is no doubt that the mountains surrounding Idaho Springs have a decided influence in tempering the winds and furnishing a certain stillness of atmosphere which is desirable in very cold weather.

A good way to understand the climate of a given locality is to divide its consideration under the heads of the seasons. The winter and summer variations are thus emphasized and one gets a good general idea of the whole year.

Winter.—December is ushered in by some delightfully pleasant and bracing weather. It is not uncommon to see the uniformly sunny autumns in Colorado, with gentle breezes and very little rains, extended over into winter, even into January, after the reports of storms, blizzards, and snow have been received from different parts of the East. The average records for two winters at Idaho Springs give, on the basis already explained, winter mean temperature, 29° F. 7 A.M., 24°; 2 P.M., 39°, and 9 P.M., 26°, with a mean of daily maximum 42°, and of minimum 18°. The precipitation is less than two inches of melted snow, notwithstanding there is an average of about twenty days upon which snow falls. Many of these storms are very light or transient, the sun coming out and shining a half day or more thereafter. The relative humidity of the atmosphere for this season is about 50 per cent.

In December the wind blows at times, but not with great force, and the west wind is apt to prevail in the morning till nine o'clock, when the direction is changed, and the east wind blows very gently till 3 P.M., when the calm of evening comes on. It would be interesting to make comparisons between the winter weather at Idaho Springs and that at Maloja, in the Upper Engadine, where some invalids pass the winter. The difficulty is, the records at hand of the Swiss resort are only for day temperatures—9 A.M., noon, and 3 P.M.—and no exact comparison is possible with our 7 A.M., 2 and 9 P.M. observations. Moreover, even with this advantage for the Maloja Station, the Colorado resort gives higher temperatures for all the averages given as well as for most of the maximum and minimum data recorded. Yet the Maloja is only 6000 feet above sea level, while Idaho Springs is 1500 feet higher.

[1] Read before the American Climatological Association, June 25, 1889.

One finds an explanation of this difference in temperature and rigor of climate in the more northern latitude and greater exposure to sea influences of Maloja, where the limit of tree growth—"timber line"—is at or below the elevation of 8000 feet, while in the Colorado resort, "timber line" is yet 3500 feet higher up, or 11,000 feet above sea level. The writer suggests that it might be as well to reckon both down from "timber line" and up from sea level, when determining the fitness of a given high altitude resort for invalids. From the foregoing it would appear that Idaho Springs, though higher in fact than Maloja, yet is not as elevated so far as the sensations of the individual are concerned. Surely those conditions of climate which limit vegetation, even the growth of the hardiest plants, for instance, scrub oak, the quaking aspen, and the mountain pine or spruce, which hug the mountain sides as though they were afraid to venture far into the surrounding atmosphere, must have an analogous influence upon the human organization. This, and other conditions pertaining to the latitude and the inland protection of the Rocky Mountain region from the influence of the ocean, lead the critic to estimate that six thousand feet elevation in Switzerland is equivalent to nearly eight thousand in central Colorado.

Spring.—It is difficult to find a place where spring is the pleasantest part of the year. In the temperate zone it is usually the breaking-up time—a season akin to the annual house-cleaning, which everybody dislikes. In the mountains the winds are fickle and uncertain, the snows are frequent, though very light, the daily variations of temperature considerable, yet little felt, and though it is often cloudy, there is a large preponderance of sunshine; in fact, all the conditions of the weather betoken a variable and elastic state of barometric pressure, such as might be expected in the attenuated atmosphere of the mountains. It has only lately been recognized that there is benefit and not injury in these frequent electric and barometric changes which are common attributes of the most stimulating and tonic extremes of climate, viz.: sea and mountain air.

The purification of the atmosphere and the oft-repeated renewal of the tonic and electrical conditions are processes constantly impressed upon the mind of the inquirer into high altitude effects, whether he explains it on the theory that the mountains are always giving off the electric force engendered nearer the centre of the earth, or whether he sees in the positive electric state of the dry air the facility in the mountains for an easy interchange between this and the negative electric state of the ground.

Notwithstanding this element of change at Idaho Springs, there are interspersed in the weather records for spring, continuous days and even weeks of sunny beautiful weather, when the day temperature of the air, the freedom from dust or any impurities in the atmosphere, and the little or no snow on the ground to impede mountain climbing, are all that could be desired.

In spring, while rain or snow at Idaho Springs falls on thirty-five days, there are about thirty clear and forty fair days, and the temperature no longer reaches zero—in fact, even during winter it has not averaged so low four times a year for three years. The total cloudiness and precipitation are about the same as for winter, though less than for the summer season. The average temperature for this season is about the average for the whole year, 45° F., made up of the three observations—7 A.M., 39°; 2 P.M., 56°; 9 P.M., 42.2°. The mean of maximum temperature is 59°, and of minimum, 33° F.

This is the time of year when many invalids, who are suited to a higher elevation than Denver, may early seek the greater benefit to be expected from an additional height. It is sometimes better for them not to remain at a level to which they have become fully acclimated and where the good results already enjoyed are in danger of being neutralized by the heat of the approaching summer.

Summer.—The mountains of Colorado are resorted to by many tourists during the summer time. There are not only the invalids from the plains, who have been sojourning in the State, but the newcomers—"tenderfeet"—from the East, together with many inhabitants of Denver and other towns seeking a whiff of mountain air and to enjoy a rest among the hills. A vacation "in the Rockies" with cool nights and bright sunny days will re-invigorate them for another year's work. It seems to the writer that there is a difference between winter and summer, so far as the sensations of a high climate are concerned, that is equivalent to a difference in elevation above sea level of about 1500 feet—that is, 6000 feet in winter are equivalent to 7500 in summer.

The lower temperature; the drier atmosphere, as to actual weight of vapor in the air, and the more invigorating or electric condition (all of which elevation insures), are also, to a certain extent, the accompaniments of the winter season. Therefore, in Colorado, and happily in contra-distinction to the necessities of the climate on the Continent of Europe, the invalid can go up higher instead of down lower when warm weather commences, and thus obtain the cooler, drier, and more stimulating climate he needs. The facilities for camping out in the summer time are unsurpassed by any country, because of the uniform dryness of the air, the porous, sandy condition of the soil, the natural drainage of all sections, and the comparative freedom from the annoyance of insects.

The average for three summers, 1886 to 1888,

gives a mean summer temperature of 62.5° F. at Idaho Springs, the mean at the three hours of observation being, 7 A.M., 59°; 2 P.M., 74°; and 9 P.M., 59°. The mean of the maximum is 77.2°, and of the minimum temperature 42.6°. The precipitation is about seven inches of rainfall, and the cloudiness about forty and the relative humidity about fifty per cent. The showers of summer are more apt to be genuine rain-storms, which happily come and go quickly, allay the dust and are prevented from contributing much moisture to the air because of the quick drainage and the character of the soil.

Autumn.—The fall is the most attractive of all the seasons. The unprecedented number of bright sunny days; the changing foliage with beautiful autumn tints; the absence of dense clouds; the continuance of the unsurpassed sunsets and sunrises, together with the cool nights, when sleep is never more refreshing than after a healthful and invigorating hunt or ramble among the hills—all are but parts of an experience which will never be forgotten by the tourist or invalid who spends an autumn in the Rocky Mountains.

Unfortunately, however, the travelling public, and especially the invalid portion, are a restless set of mortals. No sooner have the autumnal tints begun to appear, or the frosted leaves to fall, than the demands of business call away the tourist, homesickness, or a restless fear of "catching cold," seizes the invalid, and, like a flock of sheep, they all go together and hotels are deserted. Invalids will return to indoor and confining occupations, which they had better have never begun; while others, after loafing about the town till colder weather appears, will catch the "California fever," only to return to Colorado in another year, regretting they had not followed the doctor's advice. Some, however, will systematically continue to live an out-of-door life, which in this climate their experience has proved to be capable of arresting or eradicating their disease.

The population of Colorado has been largely augmented by this class of recuperated invalids. Consumptive patients, as a rule, who have received benefit in the mountains, come down to the plains too soon in the autumn. It would be much better for some of them did they consider their summer's improvement as a stepping-stone or preparation for still greater advances on the road to health.

The records of three autumns, '86 to '88, give a mean autumn temperature of 44° F., taken from the three daily averages, 7 A.M., 38°; 2 P.M., 56°; and 9 P.M., 41°—the means of the daily maximum temperature being 60.4°, and of minimum 33.4°.

The rain falls on only fifteen days, and only four or five days are put down as cloudy, the rest of them being fair or clear. The cloudiness is noted as about thirty-five per cent. of the time, and the average precipitation is between one and a half and two inches of rainfall during the whole season. This is a very good showing, and these are probably as accurate records as can be obtained from the average voluntary observer.

A NEW POSITION FOR FACILITATING THE OPERATION FOR VESICO-VAGINAL FISTULA, AND OTHER OPERATIONS ON THE UTERUS AND VAGINA.

BY J. F. HEUSTIS, A.M., M.D.,
PROFESSOR OF SURGERY IN THE MEDICAL COLLEGE OF ALABAMA.

THE idea of Sims, of utilizing atmospheric pressure to dilate the vagina, is "at the bottom" of all the positions for bringing the parts clearly into view and easily accessible. His position is the one commonly used in connection with his speculum, and the traction of the perineum upward with a speculum of variable width, form, and adjustability completes the necessary opening and stretching of the vagina. Bozeman makes the atmospheric dilatation more efficient by holding the patient in a kneeling position by a special apparatus of his devising.

Having had great difficulty in keeping strong patients in Sims's position, I have devised what appears to me to be the best and simplest method yet. I was driven to it by an operation for vesico-vaginal fistula on a woman of great size and voluminous vagina. It seemed impossible to complete the operation on account of her unruliness, as well as the bad character and situation of the fistula. Knowing that the successful dilatation and patulousness of the vagina were dependent on atmospheric pressure, and that to obtain this the belly should have room to hang clear of the table (so that the gravitation of the bowels would create a vacuum), I had a thick, *hard* pillow shoved under the upper part of her thighs, reaching to the pubes, but not to the pendulous part of the belly, the woman being prone, with her legs stretched out straight. It answered the purpose perfectly. The vagina was so widely open and expanded that the operation was done with the greatest ease. All the advantages of Bozeman's apparatus were obtained, and all the difficulties of Sims's position done away with.

On another occasion, not having the right sort of pillow at hand, I wrapped a large family Bible in a sheet and shoved it under the pubes and upper part of the thighs, testing the elevation of the belly by sliding my hand beneath it. As it is generally easy to get a big Bible or Webster's unabridged dictionary, or a hard pillow, it brings the accomplishment of our purpose within easy reach.

The prone position, with the limbs stretched out, is much easier maintained than the constrained one of Sims or the position on the knees of Bozeman, which, of course, cannot be kept up with the patient under chloroform without his apparatus.

Simple as this procedure is, I have seen no mention of it anywhere.

MEDICAL PROGRESS.

The Value of Caffeine in Adynamic Conditions.—In spite of the continued endeavors of DR. HUCHARD, of Paris, to demonstrate to the medical profession the value, and simultaneously the harmlessness, of large doses of caffeine, still there seems to be a prejudice against the drug and a ruling idea that its free use is likely to produce unpleasant cardiac symptoms. New remedies, of doubtful efficacy, that are springing up daily, find no lack of advocates, whilst many comparatively older drugs do not receive the attention that their curative properties warrant. This is Huchard's complaint, as he once more brings to the notice of the profession the value of large and repeated doses of caffeine in all adynamic conditions. As an example of its efficiency, Huchard, in the *Therap. Monatsheft* for August, cites the case of a gouty man who was suffering from a right-sided pneumonia, and who, twelve days later, developed an inflammation of the left lung. The patient fell into a condition of extreme adynamia, and collapsed. During the following thirty days, Huchard gave this patient 95 hypodermatic injections of caffeine, of 4 grains each, 51 injections of ether, and 19 of trinitrin. The result of the treatment was satisfactory beyond all expectations. The author quotes five other cases in which the value, as well as the harmlessness, of the drug in large doses is clearly demonstrated. He employed it in four other cases of pneumonia; in such instances, "the disease is in the lungs, but the danger in the heart." Huchard does not hesitate to employ subcutaneous doses as high as 31 to 48 grains. The reported efficacy of daily doses of 3 to 5 grains is entirely illusionary.

Huchard's experiments upon animals proved that the drug acted upon the central nervous system before it influenced the heart. There is, therefore, a marked difference between the action of digitalis and caffeine. Digitalis affects primarily the heart, caffeine the nervous system.

In conclusion, the author asserts:

1. That the great value of large doses of caffeine, given subcutaneously, in all adynamic conditions is unquestionable.

2. That large doses of caffeine are entirely harmless.

Toothache Drops.—The *Therap. Monatsheft* for August gives the following:

℞.—Extract of opium Camphor trit. Balsam of Peru	. .	āā 8 grains.
Mastic		15 grains.
Chloroform		f℥iij.—M.

Soak a pellet of cotton in this mixture and place it in the cavity of the tooth.

Asthma and the Uterine System.—DR. PEYER has recently written in the *Berliner Klinik*, Part 9, 1889, on an affection which he terms sexual asthma. He maintained that asthma was always neurotic, and that in different subjects asthmatic convulsions were brought on by the influence of different physical functions. In two young married women, coitus caused violent attacks of asthmatic sneezing. In another case the patient suffered from uterine fibroid, with severe asthma, which disappeared after the removal of the tumor. A patient was subject to violent asthmatic fits; on her becoming pregnant for the first time, the asthma was completely cured. In a similar case of asthma the patient suffered from chronic metritis. When the uterine affection was cured, the asthmatic complication disappeared. In all Dr. Peyer's cases the patients were more or less hysterical, and in two there was a distinct family history of neurosis. The physician must be careful now to distinguish between the possible coincidence of true asthma and disease of the sexual functions and the alleged form where the former is an effect of the latter. In the case of coincidence it is perfectly easy to understand that any aggravation of uterine or ovarian disease and any irritation of the sexual functions might aggravate the asthma. The other condition is less easy to understand, and very hard to prove in a scientific manner.—*British Med. Journ.*, August 31, 1889.

The Ptomaine of Rabies.—Recently, DR. W. ANREP reported to the Medical Society of St. Petersburg the results of numerous experiments with rabies. He claims to have discovered the ptomaine causing this disease. The results of his experiments, as stated in the *Centralblatt f. Bakt. und Parasitk.*, of July 19th, are as follows: From the brains of rabbits which had died with hydrophobia he extracted a substance of an alkaloidal appearance, which proved to be a most poisonous ptomaine. One thousand brains contained only three-quarters of a grain of the poison. Both the pure ptomaine as well as the salts thereof crystallize in water. Its chemical composition is as yet undetermined. Minute doses (about $\frac{1}{1000}$ to $\frac{1}{750}$ of a grain), given to animals, produce a rise of temperature, restlessness, quickened respiration, and palpitation. Doses of $\frac{1}{600}$ to about $\frac{1}{300}$ of a grain produce, in addition to the above-mentioned symptoms, difficulty in breathing, slight convulsions, slight heart failure, and general weakness. Larger doses, $\frac{1}{250}$ to $\frac{1}{150}$ of a grain, produce sinking of temperature, paresis of the extremities, flow of saliva, and death from asphyxia. In other words, the ptomaine can produce all the symptoms of rabies.

A Minimum Cauterizer. — The finest cautery, either Paquelin's or an electric one, causes an eschar three or four times its diameter, and though this is not of much consequence when diseases which themselves leave a scar are being dealt with, it is otherwise when a rosacea or a capillary nævus is so treated. TAENZER, in the *Monatsh. f. Prakt. Derm.*, has discovered a plan by which a cautery causing a much smaller eschar can be made, and has designed one of the following principles: A finely pointed copper needle, set in an isolated holder, is surrounded by a platinum spiral, which does not quite come in contact with the needle, and does not extend to its point. When the spiral is connected with both poles of the battery it becomes red-hot, but it does not raise the temperature of the included needle so high. The copper needle does not become red-hot, merely very warm. In addition, the diameter of the included needle is much less than in any other form of electric cautery. These two

combined factors, the small diameter of the cautery and the low temperature, render it possible to produce such a small eschar, that it is less than the head of the smallest pin, and the scar which remains is invisible without a lens. With this instrument one can fearlessly cauterize wide areas, as, for example, port-wine marks on the face; but care must be taken not to crowd the eschars too closely together. The needle must, however, be brought to the proper heat before cauterization is begun, and this can best be estimated if the needle can be easily withdrawn from the skin. If the needle is not hot enough, it can only be extracted with pain and difficulty.

Cultures from Vaginal Secretions.—DR. E. LEGRAIN, in the *Centralbl. f. Bakt. und Parasitk.*, of July 19th, describes several cultures which he has obtained from normal vaginal secretions. The cells themselves are round, and have a diameter of from 6 to 8 μ. In old cultures spindle-shaped microörganisms are found, which reach a length of 15 μ. Cultures in gelatine, after one week's time, bear a great resemblance to those of anthrax; later, however, these cultures lose their characteristic appearance. At a temperature of 95° or 97° the cultures grow with great rapidity. In a week large cultures will be formed on agar-agar; these are white, moist, and of a sticky consistency; after three weeks they cease to grow.

Salve for Infantile Eczema.—DELAPERT gives the following in the *Revue de Thér. Méd.-chirurg.* of September 1st:

℞.—Boric acid . . . . . ℥jss.
Vaseline . . . . . ℥j.
Balsam of Peru . . . . grs. viij.—M.

Sig.—Apply the ointment frequently to all the affected parts.

Antiseptic Properties in Human Saliva.—From a series of experiments with the saliva of human adults, DR. FLORADIN has found that the sulpho-cyanide of potash, which is always present, has decided antiseptic properties.—*Prager med. Wochenschrift*, August 21, 1889.

Hysterectomy for Fibroids.—PROFESSOR ALBERT has published, *Wiener med. Wochenschrift*, ii., 1889, a paper on ten successful cases of abdominal section for myoma of the uterus. In all, the extraperitoneal method of treating the stump was adopted. The elastic ligature was used in order to prevent hemorrhage during the enucleation of the fibroid and the amputation of the uterus, the stump being fixed with pins. In one case an abscess in Douglas's pouch was laid open during the operation. The abscess was drained through the posterior vaginal fornix, the tube being removed on the fourteenth day. In another Professor Albert found a pancreatic cyst in close proximity to the uterine myoma, which was very large, and removed both. This remarkable case will, the author informed his readers, be published in full. In one (and apparently in only one) of the ten cases a myoma had to be shelled out of the hyoid ligament. The posterior layer of the ligament was sewn to the abdominal incision, and the cavity left between the layers was stuffed with iodoform gauze. Professor Albert rejected the use of sponges for cleaning the peritoneum, and attributed his success in no small degree to this new departure.—*British Med. Journ.*, August 31, 1889.

A New Antidote for Morphine.—From the result of numerous experiments, DR. BÓKAI has become convinced that pikrotoxin is the most rational antidote for morphine. The action of morphine and pikrotoxin upon the respiratory centre is antagonistic, as morphine causes paralysis of the respiration, and pikrotoxin prevents this. Furthermore, pikrotoxin acts powerfully upon the vaso-contractive centres of the medulla oblongata, and in this way can rapidly decrease the abnormal blood-pressure caused by morphine. The action of the two drugs upon the cerebrum is also antagonistic. Bókai suggests the possible utility of the drug in chloroform asphyxia.—*Centralbl. f. klin. Med.*, August 17, 1889.

A Temperature of 112.8° F. followed by Recovery.—A case of fever is reported by DR. CARL LORENTZEN, in the *Centralbl. f. klin. Med.*, of August 17th, in which, although the temperature reached the astounding height of nearly 113° F., an ultimate recovery of the patient took place. We subjoin a brief history of the case:

The patient was a woman, aged twenty. As a child she had been "nervous," but there were no symptoms of hysteria. One night, after retiring, she suddenly coughed up half a tumblerful of blood. Inspiration became impossible; her face grew rapidly cyanotic. She threw herself back, and in a few moments the attack ended, and free inspiration was possible. Shortly after this she had similar attacks, which continued all night in spite of injections of morphine and ether, and cold douches, etc. During the long attacks she lost consciousness, and cyanosis was extreme. She complained of pain in the chest during deep inspirations, and this symptom always preceded an attack. Although carefully examined, no pathological conditions of the organs of respiration and digestion were found. The next day the attacks set in again, but were not so frequent. The urine, although frequently examined, was always found normal. For the next two months she had slight hemoptysis at intervals, and frequently was troubled by retention of the urine, which necessitated catheterization. Menstruation was normal. On the first of January, hemoptysis becoming more frequent, she kept her bed. During the early part of the month her temperature varied from 103° to 105° F.; patient was very weak, had chills, but did not perspire; loss of appetite, nausea, vomiting, constipation, and retention were among the symptoms complained of. During the night of the ninth the temperature rose to 112.8° F. in the rectum and 112.5° in the axilla. The patient was slightly delirious, but could be roused. Pulse 144 and full. Respirations 24 and regular. Difficulty in breathing began, but the attack was warded off by the inhalation of a few drops of chloroform. From then to the twelfth of the month the temperature remained very high, ranging from 104° to 107° F. After that, recovery was steady, and in a few months was complete. She is now enjoying excellent health.

Diagnosis was, of course, most difficult, and Lorentzen can only explain the erratic symptoms and temperature by putting them down to a hysterical origin.

Diplococcus Pneumoniæ the Cause of Peritonitis.—In three cases of peritonitis DR. WEICHSELBAUM has found the diplococcus of pneumonia unaccompanied by any other microörganism. In the one case peritonitis and acute

pneumonia existed simultaneously; in the other, pleurisy of both sides developed later; but in the third the peritonitis was unquestionably primary. Until now the streptococcus pyogenes has been regarded as the cause of peritonitis.—*Centralbl. für Chirurg.*, August 17, 1889.

Treatment of Cancer of the Rectum.—MR. T. R. JESSOP, in his address before the Section of Surgery of the British Medical Association, reported in the *British Medical Journal* of August 24th, in speaking of the treatment of cancer of the upper movable part of the rectum, said:

"If, then, we are satisfied that we have to deal with a case of cancer situated in the upper movable part of the rectum, knowing that complete obstruction may of a certainty be looked for, we shall probably all agree that it is desirable to make an artificial anus in the colon above as soon at least as the first symptoms of impending blockage appear, and in time to anticipate those further changes upon which the mortality of colotomy so much depends. And I will here state my opinion that in these circumstances the ordinary left lumbar colotomy is to be preferred, not only because of the facility with which the distended bowel is reached, but chiefly because the opening is made at a sufficient distance from the disease to insure its being found in a healthy state, free alike from cancerous infiltration and from those ulcerative changes which are apt to occur on the distal side of a strictured canal. That an early operation is called for is abundantly shown by a reference to the mortality in the cases just mentioned. Of the fifteen operated on for complete obstruction, five died within the first week, two within three months, and the remaining eight lived an average of rather more than twelve months, including one who survived the operation twenty-two months. On the other hand, of the nine operated on when no symptoms of obstruction were present, the earliest death did not take place for upward of two months, and the average of life throughout was a little over eleven months. And, again, reviewing a larger series, I find that out of fifty-four cases of colotomy taken from both my hospital and private note-book, performed for the relief of distress only, and not for obstruction, three only died during the first month, and in each of these there were some special circumstances, such as advanced age or great emaciation, to account for the early death. It is not in cases of complete obstruction or of threatened obstruction that any difficulty arises in the course to be pursued. When death is imminent and other means have failed to bring about relief, an opening somewhere and of some kind in the bowel for the exit of the pent-up excreta is obviously called for; and, as we have seen, the earlier that opening is made the more certainly will a lasting relief be obtained. And, following out the result of my observations, I would say that, given a diagnosis of cancer high up in the rectum—in the earlier stages, it is true, by no means always an easy matter—the duty of the surgeon would seem clear, namely, to recommend without delay the formation of an artificial anus."

Two Formulæ for Tooth-powder.—The following formulæ for acid and alkaline tooth-powders are given by DESCHAMPS in the *Revue de Thér. Méd.-chirurg.*, of September 1st:

Acid Tooth-powder.

℞.—Venetian talc	℥ jv.
Cream of tartar	℥ j.
Carmine	grs. v.
Essence of menthol	gtt. xv.—M.

Alkaline Tooth-powder.

℞.—Venetian talc	℥ jv.
Bicarbonate of soda	℥ j.
Carmine	grs. v.
Essence of menthol	gtt. xv.—M.

Creasote in Phthisis and Pulmonary Tuberculosis.—PROFESSOR SOMMERBRODT, says the *Medical Press* of August 21st, is an enthusiastic believer in the special virtues of creasote in phthisis and pulmonary tuberculosis. After an extensive use of the drug he gives us statistics of 5000 cases he has treated in hospital. He claims for it the power of improving the appetite, limiting the secretions, and diminishing the irritable cough. Its primary virtue, however, is its anti-bacterian property, which checks the progress of the baneful disorder. He supports his belief by pointing to Guttman's bacterian experiments with the tubercular bacilli, which he cultivated in glycerine and destroyed with a 1:4000 solution of creasote. From this experiment Guttman himself reasoned that, if he could get this quantity into the circulation without injury to the organism, he might be able to arrest the progress of the bacilli; but when he considered that a man of 60 kilos (160 pounds) contained 4615 grammes of blood (9 pounds) that would mean upward of one gramme of creasote to be present in the circulation before any good effect could be expected.

From this data Professor Sommerbrodt postulates his treatment, and has capsules made, each containing 0.05 gramme (0.77 grain). Three of these capsules are given on the first day, four the second day, five the third day, and so on till twenty-one—or twenty-nine, which he gave in three cases—are given, which would represent 1.35 grammes (21 grains) of the drug taken daily. This exactly completes Guttman's hypothesis of creasote, and Sommerbrodt believes that the facts of his results are perfectly consonant with Guttman's presumption. He points to a case sent him last year by a military surgeon. The patient was an officer in the army with marked tuberculosis, dulness over the fossa supra-spinata dextra, rhonchi, emaciation, increasing cough, with spit in which the bacilli and elastic tissue were to be found in great quantities. A year before this he had pleuritis sicca dextra.

On September 1st the creasote treatment commenced, and by September 18th he was using twenty capsules a day. On September 29th the morning sputa had very few bacilli, with a few fibres of elastic tissue. On November 1st he returned to duty, general health improved, dulness disappeared, and morning cough left him in a short time. During the whole winter he attended to his duty in the midst of snow and rain, during which period he gained twenty pounds in weight. By the month of April this year every sign of tuberculosis had disappeared, and perfect health seems now to be established.

From September 1st to June 1st he had used 5400 capsules, representing 270 grammes of creasote (nearly 7 ounces), and 1080 grammes of balsam of Tolu (35 ounces) with which it was combined. He assures us that he has treated many other cases in the same way.

Although actual experiments with animals do not confirm this opinion, Sommerbrodt is convinced that creasote does more than improve the digestion, according to Klemperer, or reduce the secretions, as Cornet believes. Sommerbrodt proposes that Koch should examine the blood serum of a patient after a month's use of gramme doses, and he thinks he will find that all bacilli have disappeared. He advises the creasote, which may be taken either in the form of capsule, tincture, or wine, to be administered immediately after food.

Treatment of Exophthalmic Goitre with Cannabin.—VALIÉRE in the *Revue de Thér. Méd.-chirurg.* of September 1st, gives the following formulæ for the treatment of exophthalmic goitre:

I. ℞.—Cannabin . . . . grs. iij.
Lactose . . . . . q. s.—M.

Make into five pills; to be taken in twenty-four hours.

II. ℞.—Cannabin . . . . grs. iij.
Distilled water . . . ℥ iij.
Syrup of orange flowers . . ℥ j.—M.

Sig.—To be taken in twenty-four hours, in teaspoonful doses.

Decomposition of Chloroform by Gaslight.—Much has been said upon this subject of late, and the opinion of the danger of the administration of chloroform by gaslight has been almost universally substantiated. PROF. BOSSHARD has added additional confirmation to the conclusion already reached by experience, by his careful chemical analysis of the changes undergone by chloroform when allowed to evaporate in the proximity of a gaslight. The following substances are formed:

1. Carbonic oxydichloride (phosgene gas).
2. Muriatic acid gas.
3. Free chlorine.

The harmful action of the two last-named gases is already well known, but the toxicity of phosgene gas is still uncertain.

DR. STOBWASSER, in Berlin, has recently conducted a series of toxicological experiments with rabbits and guinea-pigs. He put them into a glass case provided with two doors for ventilation, and introduced a flat dish containing chloroform, and near it a gas-jet.

When only one burner was used, and a small flame, the animal quickly showed symptoms of severe dyspnœa and labored respiration. When two or three burners were used these symptoms were greatly intensified, and the animals invariably died soon after the completion of the experiment, and frequently during its course.

The conclusions deduced by Stobwasser from these experiments are obvious. The danger of administration of chloroform by gaslight is, therefore, unquestionable. True, this may be in a measure mitigated if thorough and ample ventilation is secured, but still Stobwasser looks forward to the introduction of the electric light for surgical operations by night.

The Causes of Recurrence of Mammary Cancer.—The advances of modern surgery in the field of operations for carcinoma has, of late, been most extensive. The thoroughness with which such operations are now conducted, when not only the entire growth, but also the neighboring structures and lymphatics are also removed, differs greatly from the old method of operating. Foremost among the recent workers in this field have been Thiersch and Volkmann. All the same, in spite of many brilliant operators and numerous learned essayists, the results of extirpation of the mamma for carcinoma are most unsatisfactory. DR. HEIDENHEIM, of Berlin, has recently been investigating the causes of the almost inevitable recurrence of mammary carcinoma. His researches, as quoted in the *Fortschritte der Medicin* of August 15th, have been most fruitful.

In eighteen cases of cancer he subjected the extirpated gland to a most careful microscopical examination, and in twelve cases found cancerous elements at the base of the growth and prognosticated a recurrence of the disease. His prognosis was confirmed. In the remaining six cases the base of the extirpated gland was found to be healthy, and here the favorable prognosis advanced by Heidenheim has also been substantiated.

Heidenheim formulates the results of his investigations in the following conclusions:

1. The pectoral fascia is very thin and its limits very uncertain, so that it is impossible to divide it from the muscle without leaving portions of the tissue adherent. This is especially the case in corpulent females.

2. In thin women the mammary gland is distinct, but in stout women small portions of the same are adherent to the neighboring fascia and muscle, and therefore it is very probable that, after amputation, small portions of the gland will remain adherent.

3. It may be almost positively concluded that if a mammary gland contains even a small cancerous nodule it is diseased throughout its entire extent. The epithelial cells of the acini and the connective tissue become extensively infected. The lymphatics of the mamma carry these epithelial cells to some distance. Possibly one cause of recurrence of the disease is due to the acini which remain after the extirpation.

4. In conjunction with bloodvessels, lymphatic ducts stretch from the glands deeply into the retro-mammary fat. In two-thirds of the cases examined cancerous metastasiæ were found in these lymphatic ducts. Through this channel the disease can go forward until it reaches the fascia.

5. The pectoralis major is usually healthy when the tumor is in no way attached to it. It is, however, diseased when cancerous nodules are found adherent to its fascia, and also when the body of the tumor is attached to it. Probably the disease is introduced into the muscle through the lymphatic ducts.

6. Possibly, also, the contraction of the muscle, through movement, as well as the lymphatic stream, aid in carrying the infection to the surrounding tissues. A muscle infected with cancer seems to be diseased in its entire extent.

Guided by the above conclusions, Heidenheim advocates that, in cases of mammary carcinoma where the tumor is perfectly free and movable, the entire growth with surrounding tissues, and also the superficial portion of the muscle, should be removed; when, however, the growth is adherent to the pectoralis major, total extirpation of that muscle is necessary.

These important and well-founded suggestions have been most attentively considered by German surgeons. It is, indeed, to be wished for that the result of this operation should become more certain and more hopeful.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, SEPTEMBER 21, 1889.

ALBUMINURIA WITH REFERENCE TO PROGNOSIS AND LIFE INSURANCE.

A VERY interesting discussion on this subject, rendered especially important by reason of the eminence of those who participated in it, took place at the recent meeting of the British Medical Association, at Leeds. It followed the reading of an introductory paper by DR. F. W. PAVY, and, with the exception of Drs. Grainger Stewart, Roberts, and Dickinson, few English physicians whose names are associated with renal disease failed to take part. Much of interest was said collateral to that of the title, but we shall confine ourselves strictly to matter pertaining to it.

Dr. Pavy divided the cases of albuminuria intended to be covered by the discussion into three groups: (1) Cases in which traces only of albumin are present—meaning by traces quantities which require careful testing for their recognition, but by tests free from fallacy; (2) cases in which a notable amount of albumin exists and is always present; (3) cases in which a notable amount of albumin is found at one period of the twenty-four hours, and none at another—or, in other words, cases of cyclic character.

In those of the first group, *with everything else bearing upon the point pronounced to be satisfactory after a full and careful investigation of the case*, Dr. Pavy would not consider the prospects of life insurance invalidated. The granular kidney being the form of renal disease especially associated with small amounts of albumin, conditions belonging to this affection are to be particularly sought for, viz., increased quantity of urine, low specific gravity, and morbid changes in the cardio-vascular system.

Of the second group it would only be in a case that had been under distinct observation for a considerable time without anything wrong being developed, that he would venture to look favorably upon the prospects, and even then he should consider that a decidedly more than usual risk existed.

Of the third group—the cyclic albuminuria—the distinguishing feature is, that without evidence from other sources of the existence or *pre*-existence of renal disease, in the ordinary course of daily life albumin is at one period of the day present and at another absent, and that this recurs day after day in exactly the same order. Thus, on rising in the morning, there is no albumin; in an hour or two it appears, increasing for a time, and then as the day advances declines, and generally entirely disappears before bedtime. This repeats itself the next day, and so on. With respect to these cases, Dr. Pavy feels warranted in saying that if, on a sufficiently full and careful inquiry, a case is found to fall in this category, the risk may be favorably regarded. He thinks it not unreasonable, however, that an additional premium should be asked to meet the possible contingencies which may arise.

Those who are familiar with the writings of DR. GEORGE JOHNSON given out at various times on the subject of albuminuria, will be prepared to hear that he does not agree with Dr. Pavy. He says: "No medical officer, I suppose, would advise that a proposed assurer with a decided trace of albumin in the urine should be accepted at the ordinary rate of premium. Such a condition, even in a careful and prudent man, must involve some extra risk, and no office can insure care and prudence. Whether an albuminuric should be accepted on any terms can be determined only by a careful inquiry into the particular history of each case."

Dr. Johnson is very emphatic in insisting that all urines containing albumins, however small in amount and even occasionally intermittent, are pathological, which we do not think any one will dispute. He objects even to the term "functional" albuminuria, and says that in almost every instance these cases of albuminuria may, by a careful inquiry, be traced back to some recognized exciting cause, in which we are less inclined to agree with him.

DR. R. MAGUIRE thinks that when albumin is present at the time of the examination for insurance, the life should be rejected, or, if accepted at all,

should be accepted at an increased premium. DR. P. H. PYE-SMITH also regards "functional" albuminuria as really "pathological for the time being," and would defer the applications for assurance rather than attempt to determine what is often an insoluble question. DR. W. T. GAIRDNER could not find a more just or accurate expression for his opinion than to say that serum albumin, when present in the urine even casually, must be regarded as a danger signal. As for the amount of danger implied in the fact in particular cases, he was neither pessimistic nor optimistic. He, in a general way, accepted Dr. Pavy's conclusions, both as to the significance of the fact and the other circumstances to be taken into account in forming a prognosis. He thought, however, that even in a case otherwise acceptable, judgment must be postponed for a period varying, according to circumstances, from weeks to months.

DR. RABAGLIATI made a good point with regard to the specific gravity of the urine, saying that above 1020 it suggested lithæmic nephritis; if below 1010 it suggested further advance of the disease. On the whole, he could not support those who were disposed to take a favorable view of the cases in which even a trace of albumin was present.

DR. C. R. DRYSDALE thought that in temporary albuminuria delay is advisable before coming to a definite conclusion, while DR. R. SAUNDBY is a firm believer in the innocent character of albuminuria in certain cases, and would, therefore, gladly see some change in the present practice of the majority of insurance companies if it could be brought about with due regard to their interests.

DR. W. J. TYSON thought that the popular knowledge concerning the presence of albumin is causing a needless amount of anxiety, and made the happy suggestion that the Collective Investigation Committee take up the subject of prognosis in these cases of permanent, but apparently harmless, albuminuria.

DR. J. E. EDDISON, of Leeds, thought that every case of albuminuria referred for report as to life insurance should either be refused or deferred six months or a year, and if the albumin persisted, should be rejected, no matter how healthy the applicant appeared in other respects.

We regard the contribution of DR. CRANSTOUN CHARLES as one of the most valuable the discussion received in the way of furnishing tangible data whence conclusions dare be drawn. He reported the results of some observations upon apparently healthy students and others, similar to those made by Grainger Stewart and published in his new book on albuminuria a year ago. Out of 250 of the former, 34, or 13.4 per cent., presented albumin in the mid-day urine, and of 72 pupils in a training-college albumin was present in the after-dinner urine of 24, or 33⅓ per cent., while in half of these peptones were also present. Out of 100 candidates from the country there was albumin in the morning urine of 30.

It will be seen that there was not as much unanimity of opinion upon this important subject as could be desired. Dr. Pavy and Dr. Saundby alone are clearly of the opinion that albuminuria should not be an unconditional obstacle to life insurance. In this they are partially sustained by Drs. Gairdner and Drysdale, while Drs. Johnson, Maguire, Pye-Smith, Rabagliati, and Eddison would evidently consider it a hindrance scarcely, if at all, surmountable. Much discussion about a term is scarcely profitable. As intimated, we hardly think that any one will claim that an albuminuria is to be regarded as "physiological," or, strictly speaking, even as "functional." But it does not follow from this that a small amount may not be compatible with sound health, as such observations as those of Cranstoun Charles, given above, and of Grainger Stewart, conclusively show. We cannot see that an impartial examination of such statistics as these permits any other conclusion. Of course, such cases must not be confounded with cases of albuminuria due to structural change in the kidney. Hence more than ordinarily close investigation is often needed to distinguish them, but such distinction being made, we cannot see a sufficient reason for altogether rejecting such applications, provided, as Dr. Pavy said, everything else bearing upon the point be pronounced satisfactory after a full and careful investigation of the case.

As intimated, a number of other important facts were brought out in this discussion. Thus Dr. Pavy makes, in passing, the statement that whereas in structural renal disease there is usually present only serum albumin, thrown down by the mineral but not by organic acids, in cyclic albuminuria his experience leads him to believe that it is the rule rather than the exception, that the addition of an organic acid is followed by a precipitate, showing the presence here of two kinds of albumin, one like alkali-

albumin and mucin, precipitated by organic acids, and the other serum albumin.

Dr. Rabagliati had also noted, that out of 3246 deaths in the Scottish Widows' Fund, 255, or 7.8 per cent., were due to "urinary" diseases. Of these, rather more than one-half, or 4.3, were ascribed to "disease of kidneys and nephritis." He had compared this with the deaths among adult males in a mixed population like that of Bradford. There, among 3317 deaths of males above fifteen years of age, only 3.4 per cent. were returned as due to urinary diseases. Without laying too much stress on this, he thought it showed a *prima facie* case for the view that the well-to-do, who applied for life insurance, suffered more from urinary diseases than the ordinary population—mainly because well-to-do people ate and drank too much.

THE Canadian Medical Association held, on the 12th and 13th of last month, a most successful annual meeting at Banff. The meeting was very largely attended, and is said to have been most enjoyable in every way. The United States was represented by Drs. Currie and Whittaker, of Cincinnati; Dr. Baker, of Philadelphia; Drs. Gibney and Bulkley, of New York, and others. Toronto was decided upon as the next place of meeting.

THE First International Congress of Physiologists was opened at Basle, Switzerland, on the 10th inst., and sat for three days.

THE chair of gynecology and obstetrics in the University of Vienna, rendered vacant by Breisky's death, will be filled by PROFESSOR CHROBAK, of Vienna.

The chair of medical pathology and therapeutics at Prague has been filled by PROFESSOR VON JAKSCH, of Graz. Both appointments seem to give general satisfaction.

WE note that PROFESSOR WEIGERT, who has edited the *Fortschritte der Medicin* ever since the death of Dr. Carl Friedländer, its founder, has resigned its editorship.

IT is stated that Mr. Reginald Harrison, of Liverpool, a well-known authority on diseases of the urinary organs, is about to take up his residence in London.

PARIS has indeed had her fill of International Congresses during the past two months, and this year may justly be remembered as "the year of congresses" in that city. Yet all have not been chronicled, for we read in the *Münchener med. Wochenschr.* that even an Anti-vaccination, or, more broadly speaking, an International Anti-inoculation Congress, was held last month. The use of a room in the City Hall of Paris was denied the Congress.

AN institute has been founded in St. Petersburg for the experimental study of infectious diseases and for prophylactic inoculations. The institute is to be under the charge of Professor B. Anrep.

Two cities that have been almost revolutionized in their sanitary conditions are Munich and Memphis. In the former typhoid fever was one of the high factors of the bills of mortality before Pettenkofer instituted his measures of reform, whereas now the fever is so rare that the medical teachers are often at a loss for a case to show to their classes. From being one of the most unhealthful of European cities, Munich has become one of the most salubrious; it is more prosperous, from an influx of strangers who are settling there, and from the increased attendance of students at the University. Memphis is still engaged upon its sanitary reforms, being busy with the introduction of an artesian water supply of admirable quality. Memphis was formerly a notoriously unhealthful town, and suffered greatly from epidemic disease, whereas to-day she has as low a mortality as any city in the country having the same population. In the words of Dr. Conn, "the change that has come over the city in less than ten years seems more like the tales of romance than the mere realization of a scientific and economic truth."

IN Japan there are thirty-one schools of medicine, one of dentistry, and two of veterinary surgery. The university of Tokyo (the Imperial University) has over 1200 students, and an average of 100 medical students graduate yearly. In Tokyo alone there are numerous active medical societies and over twenty hospitals.

THE Second Congress for Tuberculosis will be held in Paris during the latter part of July, 1890. Professor Villemin will act as president. The following questions are to be discussed: 1. The identity of human and bovine tuberculosis, also that of other animals. 2. The bacteriological and morbid associations of tuberculosis. 3. The isolation of

tuberculous subjects. 4. The agents capable of destroying Koch's tubercle bacillus, with a view to the prophylaxis and therapeusis of the disease in man.

WE learn from the *Gazetta degli Ospitali* that the Seventh International Pharmaceutical Congress will be held in Milan during the first part of September, 1890. A committee of arrangements has already been appointed.

THE second Italian Congress for Internal Medicine will be held in Rome from the 15th to the 18th of October of this year. The subjects to be discussed will include malarial infection, the pathology and therapy of nephritis, and gout.

REVIEWS.

A TREATISE ON SURGERY, ITS PRINCIPLES AND PRACTICE. By T. HOLMES, M. A. Cantab., Consulting Surgeon to St. George's Hospital, Member Associé de la Soc. de Chir. de Paris. With 428 illustrations. Fifth edition, edited by T. PICKERING PICK, Surgeon to, and Lecturer on Surgery at St. George's Hospital; Senior Surgeon Victoria Hospital for Children; Member of the Court of Examiners Royal College of Surgeons, England. Pp. 1008. Philadelphia: Lea Brothers & Co., 1889.

HOLMES's Surgery has always been a popular book, and now that a fifth edition has been issued, it will be safe to predict a favorable reception for it. A large number of alterations and additions have been rendered necessary by the steady growth of surgical science, and in the main these additions are judicious and in accordance with the doctrines of the present day.

The chapter on "Diseases of the Eye" has been omitted, both in order to make room for the necessary enlargement of the work, and because it is impossible to do justice to such an important subject in a limited article. Our author is a strong advocate of "antiseptic surgery," but we cannot think that all of his views in regard to this matter are either safe or correct—for instance, it is recommended to wash out the peritoneal cavity with a sublimate solution, "which should not be used of a greater strength than 1 in 4000." This is certainly a dangerous strength to use for this purpose. The spray is only recommended as a purifier of the atmosphere prior to operation, but most surgeons will fail to believe that the "bacteria which may be floating in the air" are destroyed thereby. It is recommended to redress the wound at the end of twenty-four hours, and to allow no antiseptic dressing to remain longer than a week without removal.

Most of the chapters will be found to be quite exhaustive for a text-book, and whilst the tendency of the author is toward conservatism, his conservatism is well tempered with judicious boldness. The only criticism which can be made unfavorable to the work, is that it is not quite up to date, and this may have been unavoidable. The experimental work of Senn in regard to intestinal obstruction, etc.; his bone-plate suture for the rapid restoration of the continuity of the intestinal canal; his rectal insufflation of hydrogen gas for the detection of perforations in the bowels, mark an era in intestinal surgery, but no notice of them is found in this book. Other defects might be mentioned, but they are far overbalanced by the good points of the work. The chapter on "Aneurism and Diseases of the Arteries" is especially satisfactory, occupying fifty pages of the text. In our opinion the fifth edition of Holmes's Surgery is a good book, and deserves a large circulation.

LECTURES ON BRIGHT'S DISEASE. By ROBERT SAUNDBY, M.D. Edinburgh, F.R.C.P. Lond., Emeritus Senior President of the Royal Medical Society, etc. 12mo., pp. vii., 290. With fifty illustrations. New York: E. B. Treat, 1889.

WE wish we could say as much for the other features of the make-up of this American reprint of Dr. Saundby's excellent lectures as we can for the type, which is as clear and readable as the author's style. This is worthy of mention, because publishers do not always show proper consideration for the student's overworked eyes, and appreciation may be an encouragement to persist, to those who do.

Much of the material of these lectures has been previously published, but the preface states that "every chapter has been rewritten, every point has been thought out again." The work is divided into three sections, entitled respectively "General Pathology," "Clinical Examination of the Urine," and "Bright's Disease," these being appropriately subdivided. The present state of knowledge upon all topics treated is concisely set forth, a fair summary of the most prominent views upon debated questions being followed by a lucid exposition of the author's own opinion, and the evidence upon which it is based.

Believing that albuminuria may be without pathological significance, he thinks that *per se* it should not be a bar to life insurance. He proposes an etiological classification of Bright's disease into (1) febrile nephritis, (2) toxæmic nephritis (3) obstructive nephritis. The terms are self-explanatory. All the usual pathological divisions may be found under each of these classes. The first division, however, includes most cases of acute parenchymatous nephritis and of chronic fatty kidney, while the second is specially associated with the small red granular kidney, including chronic lithæmic cases, acute nephritis of gout, acute or chronic cases due to poisoning by vegetable, animal (extraneous or autogenous), or mineral poisons, and certain cases of primary acute nephritis attributed to chill, but in which there is probably an existing dyscrasia. Lardaceous degeneration is not made a special class, because it can be called "Bright's disease" only when associated with chronic nephritis—*i. e.*, the chronic nephritis of chronic pyrexial disease. Albuminuria and Bright's disease are not synonymous; so that even the occurrence of this symptom in general lardaceous degeneration, including the kidneys, does not bring the renal affection under the latter heading. "The Complications of Chronic Bright's Disease" is made a separate chapter. The questions of diagnosis, prognosis, and treatment are treated under each of the different divisions. We cite with approval

the author's opinion that an exclusive milk diet in chronic gouty nephritis is not only unnecessary, but positively harmful. We have frequently met with cases in which the ill results of an attempt to maintain this diet have prejudiced the patient against necessary dietetic restrictions. Dr. Saundby's discussion of therapeutic points is too condensed to be satisfactory, but the advice given is, in the main, judicious, and is evidently based upon an extended experience.

THE URINE, THE COMMON POISONS, AND THE MILK. MEMORANDA, CHEMICAL AND MICROSCOPICAL, FOR LABORATORY USE. By J. W. HOLLAND, M.D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Illustrated. Third edition, revised and much enlarged. 12mo., pp. 84. Philadelphia: P. Blakiston, Son & Co., 1889.

THAT this little book admirably fulfils its purpose as a syllabus for the laboratory, is evidenced by the succession of new editions called for. A highly useful feature in its make-up is the interleaving with blank pages for memoranda, calculations, or more extended notes by the student.

DIPHTHERIA: ITS NATURE AND TREATMENT. By C. E. BILLINGTON, M.D. AND INTUBATION IN CROUP AND OTHER ACUTE AND CHRONIC FORMS OF STENOSIS OF THE LARYNX. By JOSEPH O'DWYER, M.D. 8vo., pp. 326. New York: Wm. Wood & Co., 1889.

To reverse the order of the publishers and take "the best, first," the chapter upon intubation contributed by the author of the operation—for such he is entitled to be called, despite Bouchut's unsuccessful attempts of earlier date—is well worthy of careful study. It is terse in statement, clear in style, and eminently practical in tendency. The operation, its indications, its technique, its complications and its accidents, are fully explained; and the after-treatment is equally well handled.

Dr. Billington's treatise upon diphtheria is not sufficiently full or critical for those who are not acquainted with the literature of the subject; and for those who are, a large portion of it is unnecessary. It has, nevertheless, a positive value as the record of the experience of a careful observer who has enjoyed unusual opportunities to become familiar with the clinical aspects of his subject. The chapters upon symptomatology, diagnosis, prognosis, and treatment are therefore those which give the work its *raison d'être*.

Etiology is perhaps the topic upon which the author lays greatest stress, and he is a staunch upholder of the doctrine of the primarily local origin of the affection. A microbe, not yet positively identified, becoming implanted upon mucous membrane of which the epithelium is inflamed or abraded, gives rise to a chemical poison, which by direct action upon tissues and vessels causes the local diphtheritic process; while absorption of this ptomaine and perhaps of other septic products, gives rise secondarily to the constitutional manifestations.

Treatment must first endeavor to check or combat the local disease; second, to prevent systemic infection; third, to avert the evil consequences of such infection. Local disinfection by means of a spray of carbolic acid and lime water, topical applications of mercuric chloride, and nasal irrigations of warm salt water; together with the internal use of potassium chlorate, tincture of ferric chloride, and mercuric chloride; all in accordance with certain formulæ and methods to which great importance is attached; are, in addition to the obvious points of hygiene and nutrition, the measures chiefly relied upon. Alcohol is freely used in conditions of adynamia, but its indiscriminate use is deprecated.

There is an extended discussion of the value of agents other than those mentioned, which have been vaunted by various observers; and the subject of tracheotomy in laryngeal diphtheria is treated with reasonable fulness; though the important questions of after-treatment are somewhat neglected.

SOCIETY PROCEEDINGS.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Stated Meeting, March 15, 1889.

THE PRESIDENT, CHARLES T. PARKES, M.D., IN THE CHAIR.

(Concluded from page 303)

DR. WILLIAM E. CLARKE spoke of

BLEEDING IN PUERPERAL ECLAMPSIA.

From the earliest dawn of medical science to within recent memory, bloodletting was almost universally regarded and employed as one of the most valuable of remedies. In discussing the curative treatment of puerperal eclampsia, especially in reference to venesection, it may be well to inquire how much the present popular disfavor of the remedy and its disuse by the profession are due to popular clamor, to the caprices of fashion, to the vagaries of pseudo-practitioners, or how much to the advancement of pathological knowledge and the deductions of sound scientific research.

Popular clamor and the blind zeal of the pseudo-scientist and misguided reformer have had very much influence in the matter. But blind and unreasonable prejudice against bleeding has not been confined to non-professional or to illegitimate practitioners.

Allison, in 1856, assumed that the type of diseases had changed from a higher to a lower type, and that while bleeding and other antiphlogistic remedies twenty years before were useful, at that period they were harmful. Dr. Bennett contended that there had been no such changes in the type of diseases; that bleeding and other antiphlogistic remedies were contraindicated, in all internal inflammations, by principles of sound pathology. To the writings of these men, together with Dr. Flint of our own country, are probably due, more than to any other respectable medical writers, the changed views among the regular profession. Still, Dr. Bennett, in the discussion with Dr. Watson on this question, agrees with the latter that we should so bleed as to secure its advantages and avoid its disadvantages.

The speaker, during a stay in Washington, made a very thorough examination of the literature of this subject in the library of the Surgeon-General's Office. He found that the consensus of a very large majority of the eminent members of the profession who wrote on the subject, during this war on bloodletting, is in favor of it, particularly in selected cases of puerperal eclampsia.

He further believes, from his clinical observation in a practice of more than forty years, that in cases of puerperal eclampsia where there is turgescence of the vascular system, or in cases of uræmia, bleeding is called for to relieve vascular tension and to remove damaged blood from the system.

In 1855 he reported to the Chicago Medical Society a case of eclampsia that was promptly relieved by bleeding, after chloroform had been used, only apparently to increase the plethoric condition of the patient. The writers of that day usually described puerperal eclampsia under three distinct varieties: hysteric, epileptic, and apoplectic. The position taken in the report was that chloroform was the only proper remedy in the first variety, and bleeding in the two others.

To the principles recorded in that paper he still adheres, and in some ten cases he had used the lancet with the happiest results. In one case no blood was taken, as it was regarded as hysterical, but the convalescence was far more tedious than in any of the others. In no case coming under his observation has he seen any of the evils attributed to the abstraction of blood, but he believes that he has seen suffering and death which might have been averted by the timely and judicious use of this much-abused but potent remedy, if the attending physician had not been prejudiced, or had had the moral courage to resort to its use. The attention the subject is receiving from the profession is a hopeful indication that venesection is soon to resume its place as a valuable therapeutic measure.

DR. EDWARD WARREN SAWYER, in opening the discussion, said that concerning the subject of eclampsia he had but two points to speak of, and both concern its etiology. He recalled very distinctly a most interesting conversation upon this subject that he had with the late Joseph Freer, who had experimented extensively with reference to ascertaining the condition of the urine in eclampsia, and the effect of that urine upon the lower animals when injected into the veins. His conclusions, or chief conclusion, was that eclampsia was not due to uræmia, as much as popularly thought, but that it was really due to anæmia of the brain; this condition being effected by the œdema of the brain of the eclamptic subject.

The second point which the speaker's practice had demonstrated to him effectually is that the danger or the fatal results of eclampsia are not proportionate at all to the amount of anasarca presented by the patient. In fact, of the four cases of eclampsia of which he had a very distinct recollection, the two fatal cases scarcely presented any anasarca, while the cases that recovered presented an anasarca to a degree that was never before seen by him. In both of these cases the degree of anasarca was such in the genitals that the patient could not possibly approach her knees; yet both cases recovered. In one, vision was nearly lost for a number of weeks; in the other, hearing was greatly impaired. In the fatal cases there was less anasarca than is usual in the primipara, and it was limited to the feet. In one of the fatal cases the urine had been examined during pregnancy, and no albumin found; but within five minutes of the birth of the child she had eclampsia, followed by death.

DR. W. H. BYFORD said that these papers had thrown him into a kind of reverie, causing him to look back to old times and to follow the subject down from the years of which Dr. Clark spoke to the present, recalling what the pathology of the disease was then and what the therapeutics were as compared with the present. At that time, doctors used to consider the pathology of eclampsia as apoplectic in character. They thought there was either a very great congestion of the brain unattended by effusion, or that there was great congestion of the brain attended by effusion of blood or serum, and in the dissections of cases at that time it was a very frequent thing to find clots of blood in the substance of the brain. There were also symptoms indicating œdema of the lungs. Those lesions seem to have been the anatomical pathology of the disease at that time. We had no idea, as at present, of the *etiological pathology* of eclampsia. We supposed that the pressure of the uterus upon the abdominal vessels and those of the chest through the diaphragm, caused hyperæmia of the brain, because of the partial exclusion of the blood from those vessels, both venous and arterial. Pressure upon the abdominal aorta prevented the arterial blood from being thrown so plentifully into the inferior extremities, and diverted it to the brain. We believed that this resulted from the pregnancy, and that the full effect of the cerebral hyperæmia thus caused depended upon some constitutional condition with which we were not acquainted. That kind of reasoning upon the pathology of eclampsia led us to a practice which is very different from the practice of the present time. Tracing the disease to a congestion of the brain, or to an effusion of blood in the brain, we believed the best preventive measure—the best curative measure—was evacuants—something to lessen the quantity of blood in the system and at the same time prevent the large quantity of blood being thrown into the brain through the circulation, giving Nature time to correct herself by delivery, etc.

To sum up his experience in that kind of treatment, he said that he had pursued it until he came to Chicago, twenty years from the commencement of his professional career, and he did not remember that he had seen a patient die of eclampsia until he came here. The first case he saw was in consultation. The patient had eclampsia and was only about six months pregnant. They discussed the subject of treatment, and he was astonished, as she was a strong woman, that nothing was said about bleeding; but venesection had been dead several years in this part of the country, and he could not induce the other consultants to think that it was a proper remedy. That was the first patient he ever saw treated without venesection, and the first patient he saw die. He agreed perfectly with the sentiments expressed in the paper on the etiology of the disease. He thought it perfectly rational to trace it to a kidney origin, as our pathological observations have proven that there is poison of some kind produced by retention of some of the constituents of the urine. Something occurs in the kidneys that prevents their depurating influence, and there accumulates in the blood a considerable quantity of excrementitious matter that ought to be eliminated, which seriously affects the nervous centres. He did not at all subscribe to the idea that cerebral anæmia is necessary to these convulsions in the beginning; he was sure it is not present as the case advances. These cases begin with epileptic symptoms, and they generally end with apoplectic symptoms. He believed in the beginning that there is not much vascular excitement in the brain, but

that the terrible convulsions and the great cramps, especially in the chest, produce such a determination of blood to the brain as to produce organic effects in it.

As to his present ideas with reference to the treatment of eclampsia, he agreed with Dr. Earle in the majority of his conclusions. But in the general way of treating these patients, leaving out the considerations of delivery, he believed it was better for us to begin, especially in patients of strong, plethoric habit, by copious venesection. In the old days when venesection was done, we did not count the ounces of blood as a reason for bleeding no more, but we bled to produce an effect, and sometimes we bled three or four pints at a time. And he thought now if we could have a patient early, and the pregnancy has not terminated, the best thing to do is to bleed to reduce the quantity of blood, and consequently reduce the force of the circulation and acrid character of the blood by the rapid absorption of lymph which follows. After this is done we should give an active cathartic to work off any accumulation in the intestinal canal and produce revulsion. During the whole time after bleeding we should keep the patient constantly under the influence of chloral. Chloroform bears no comparison, in its effects upon eclampsia, with chloral, and one reason is that we do not know how much chloroform the patient is inhaling. Certainly there is no sense in holding a sponge of chloroform to a woman when she is in convulsions, for respiration is suspended until the convulsion ceases; it is impossible to get it into her system while the air is thrown out of the lungs and the chest closed by clonic spasms, but we can give chloral by the stomach or by the rectum, and keep up its influence to a recognizable degree. These remedies must be supplemented by the treatment which Dr. Earle so intelligently presented. He thought very favorably of pilocarpine; it is a most excellent addition because it serves to promote the secretions to such a great degree.

DR. J. S. KNOX said that his introduction in medicine was under the direction of an old and skilful country doctor, who was decidedly in favor of venesection. He used to bleed in labor for irritable os, for rigid perineum, for the prodromal symptoms of eclampsia, and he always bled for eclampsia. He never knew him to lose a case, and he told him he never had lost one when he bled early enough. He was impressed, therefore, with the idea that venesection was the treatment for eclampsia. He had always followed it, and in ten cases that had come under his observation, seven were bled and recovered, three were not bled and died. His treatment has been to bleed, as Dr. Byford expressed it, copiously, drawing from fifteen to twenty ounces of blood from a large orifice, and he never yet had seen a woman so anæmic that he hesitated to employ this method. After the bleeding, he gives half a grain of morphine hypodermatically, and medicines to keep the bowels and kidneys acting freely.

DR. F. HENROTIN said that in his own mind he divided these cases into two varieties. On the one side are the cases that give rise to symptoms long before delivery; cases that are accompanied by a great deal of œdema, both of the genitals and of the limbs; cases that draw attention to the fact that albuminuria is probably present, which is usually found to be the case. And it always seemed to him that those cases having such symptoms were best treated by venesection, catharsis, and pilocarpine. On the other hand, there are a few extremely severe cases occurring in patients who had shown no œdema, who usually had shown no symptoms whatever before delivery, but were supposed to be perfectly healthy, and in whom the convulsions occurred either at the time of labor or several hours afterward. In two of these cases he had seen venesection tried without any effect whatever, while, in the cases that gave rise to œdema, venesection, which has always been followed almost as a routine practice by him, has always seemed to be of a great deal of benefit. Those patients that were affected very late in pregnancy or after delivery, that did not give any symptoms whatever, where albuminuria was not present at all, seem not to have been affected in any way whatever by venesection, but seem to have been helped by morphine and narcotics; while those that resembled more particularly cases of the uræmia that we get after scarlatina, those cases of supposed large, white kidney in which albuminuria is a prominent symptom, those cases seem to be affected favorably by venesection, and in such cases coming under his observation, with one exception, all recovered. In regard to drugs in this disease, he believed from personal experience that the giving of pilocarpine hypodermatically, while the patient is unconscious, is capable of actually drowning the patient by the excessive flow of saliva and increased pulmonary secretion, so that he would advise caution in its administration when the patient is unconscious.

DR. W. W. JAGGARD said that it is possible that in certain cases the nephritis of pregnancy may be an example of infection. But the sporadic occurrence of the disease, the apparent selection of primiparæ, and cases of multiple pregnancy, tend to show that the operation of this factor is not general.. Staude calls attention to the predisposition to the disease observed in case of pelvic contraction and where the fœtal head is of uncommon size. Pressure on the pelvic bloodvessels causes an increase in the general blood-pressure that ultimately reacts upon the kidneys. Eclampsia appears among the rich and poor alike. Its victims are oftenest young, healthy, blooming women in whom it is reasonable to suppose the physiological resistance of the tissues is not notably lessened.

Dr. Nelson and Dr. Merriman have touched upon an important item in prognosis. What is the probability as to recurrence of eclampsia in subsequent pregnancies? A guarded answer must be returned. In general, eclampsia in a first pregnancy seldom means a recurrence of the disease in succeeding gestations. When all symptoms of nephritis disappear within a short period after delivery, the probability of immunity becomes almost a certainty, so that eclampsia in a first pregnancy, *per se*, is not an indication for the prevention of conception nor for the induction of abortion. If, however, symptoms of Bright's disease, no matter however latent, persist, the patient should be warned against conception. In case of conception and the development of albuminuria early in pregnancy, he was of the opinion that the induction of abortion ought to be seriously considered.

The value of the hot-water bath is greatest in the prevention and least in the cure of eclampsia. Used as described by Dr. Earle—the Vienna plan—it is by far the most efficacious procedure that we possess in the prophylaxis of the disease.

As to the treatment of eclampsia during pregnancy, the weight of evidence and opinion is decidedly in favor of an expectant plan of treatment, unless abortion or premature labor is imminent. Wait until the seizures are well over and until convalescence is established before interrupting pregnancy. If, however, abortion or premature labor is imminent, the indication is to aid in the evacuation of the uterus.

In eclampsia during labor, three indications are clear:

1st. After the insertion of a gag and the protection of the woman's body by pillows and the like, the indication is to control the convulsions by profound narcosis. The choice of remedies is not so important as that the narcosis shall be deep and continued. Chloroform is by far the best agent to control the seizures, while the narcosis can best be maintained by large doses of chloral and the bromides exhibited *per rectum*. Winckel,[1] who relies exclusively upon chloroform inhalations and chloral *per rectum*, has had only seven deaths in ninety-two cases. As at present informed, this result is better than that obtained by any other plan of treatment on record.

2d. The second indication is to evacuate the uterus as rapidly as may be consistent with the safety of the mother and child. Experience teaches that the convulsions cease when labor terminates in about one-third of the cases, in one-third they grow less frequent and severe; only in the remaining one-third do they continue without change. Early in the first stage of labor, before effacement of the cervix and dilatation of the os, puncture of the membranes is commonly the best means to accelerate labor. The escape of the liquor amnii is not infrequently followed by an abatement of the convulsions. Later in the first stage, after effacement of the cervix, digital dilatation of the os externum is often indicated. It is seldom necessary to incise the os externum. Delivery may be completed by the forceps or version and extraction, according to the conditions of the concrete case.

3d. The third indication is to eliminate the retained excrementitious products of the urine by diaphoresis, purgation, and diuresis. The hot pack is probably the best means. He thought Dr. Earle would encounter some difficulty when he attempted to put an eclamptic in the hot-water bath, besides running the risk of drowning his patient. The vapor bath, by means of the alcohol lamp, is efficient and easily exhibited. Pilocarpine must be used with extraordinary caution, only in the beginning of the disease, when the coma is light, the pulse full, and the respiration free. Deep coma, weak heart, and beginning œdema of the lungs are absolute contra-indications. The evidence upon this point, brought forward by Fordyce Barker, Kleinwächter, Sänger, Welponer, Schramm, Klotz, Carl Braun, Winckel, Schröder, and others is decisive. The unqualified praise this remedy has received this evening must be taken *cum grano salis*. Dr. Henrotin is right in saying there is grave danger of drowning the woman in her own secretions.

Finally, there comes the question of bleeding. Every speaker has commended bleeding in the strongest possible terms. There may have been slight differences of opinion upon other points, but all unite upon the item of venesection. Bleeding is the specific treatment of eclampsia. But no one has given a reason why he bleeds, neither has anyone presented a series of cases that demonstrate the value of phlebotomy. There are at least three good reasons why we should not bleed in uræmic eclampsia.

1. The procedure is without important effect upon the demonstrated cause of the disease. The amount of excrementitious material that can be eliminated by bleeding is comparatively trivial. Blood pressure cannot be depressed for any considerable period of time, unless the patient be dangerously exsanguinated. Hemorrhage into the brain, as a consequence of puerperal convulsions, is an extremely rare finding. The indication for bleeding in eclampsia is not stronger than in the convulsions of Bright's disease in the male and non-pregnant female. None of the Fellows present, he was certain, would bleed in the latter affection.

2. Clinical experience teaches that much better results are now obtained without bleeding than were formerly observed when venesection was commonly practised. In support of this proposition, the verdict of the Vienna (Kucher) school of obstetrics must be cited: "In the Vienna clinics, where the results of treatment are far better than anywhere else," bloodletting has been completely discarded. Winckel's (Munich) statistics have already been mentioned—ninety-two cases, seven deaths. In Schroeder's clinic (Berlin) bleeding is no longer practised, on the ground that better results are obtained since its rejection.

3. The weight of opinion is opposed to venesection. In this connection names are to be valued like coins. C. Braun, Gustav Braun, Josef Spaeth, F. Winckel, Schroeder, have expressed themselves in no equivocal terms as opposed to bloodletting.

If bloodletting in eclampsia is unphilosophical, if it is opposed by clinical experience and the weight of professional opinion, upon what grounds can this practice be tolerated? If we must bleed, let us "bleed the woman into her own veins" by the use of veratrum viride.

The experience of one individual in private practice or in our small lying-in hospitals does not count for much. It can have but slight weight in influencing the conduct of others. Yet, as the personal experience of each member had been the basis of his remarks this evening, the speaker felt like adding his own testimony. Up to the present, in about thirty cases of eclampsia, he had not observed a clear indication for venesection. His observation of the cases of others in which bleeding was allowed has failed to convince him of the value of the procedure. Some of these cases were a little remarkable and cannot be fairly cited in this connection, since at the same time with free bleeding the patient's blood was saturated with chloroform, morphine, chloral, and the bromides. It was a question as to the cause of death, whether it was the Bright's disease, the bleeding, or the artificial toxæmia.

In the treatment of eclampsia one item has been neglected. It is necessary to use all precautions against septic infection that so frequently occurs.

[1] Lehrbuch der Geburtshülfe, 1889, p. 590.

New Hospital in Wilmington.—The corner-stone of the Delaware Hospital, in Wilmington, was laid August 18th of this year. The grounds and buildings, when completed, will cost $20,000. Of this sum $16,000 is already in hand.

CORRESPONDENCE.

PHENACETINE POISONING.

To the Editor of THE MEDICAL NEWS,

SIR: The increasing favor of this new member of the carbolic acid group among general practitioners has induced me to report the following case from poisoning by its use:

Mrs. W., aged thirty, married, no children, slight, anæmic, of a nervous temperament, has been a great sufferer for years from a chronic pelvic trouble, an endometritis, and associated with it neuralgia of a most persistent character in the form of migraine or tic, in frequent paroxysms, occurring two or three times a week. Recently she has been on arsenic and iron and has greatly improved in general health. For her neuralgia she has taken antipyrin and antifebrin, and many other of the approved anti-neuralgic remedies.

Antipyrin and antifebrin she has taken frequently on different occasions in fifteen-grain doses four or five times daily, without any of the characteristic symptoms. She has not, however, received much benefit from their use. Last week I was hastily summoned to prescribe for her in one of her usually severe attacks. In recalling the previous inefficiency of antipyrin, I decided to give her phenacetine. Twelve powders each containing seven and a half grains were given, a powder to be taken every two or three hours. Six hours after leaving my patient I was again urgently requested to see her, and found her in a state of collapse, severe præcordial pains, and great dyspnœa, lividity of the whole surface, nails, lips, and conjunctiva; great restlessness, inability to lie down or stand; was supported in a semi-recumbent position. Temperature at the time of my first visit was 101½° F. Involuntary movement of the bowels occurred once; pulse below normal, slow and soft; cold perspiration; pupils slightly dilated. She remained in this condition for about ten hours, slowly improving under the use of ammonia and alcoholic stimulation. The blueness did not fade for more than three days. Convalescence was very slow, the patient not being able to be around her room for over a week. Three powders of seven and a half grains each were taken during the six hours.

While I regard phenacetine as the most reliable remedy we have for any nerve pain, never requiring it in larger doses than two or three grains, frequently repeated, if necessary, the apparent tolerance of the patient for the drugs antipyrin and antifebrin, was strikingly offset by the use of phenacetine.

W. C. HOLLOPETER, M.D.

1408 N. 13TH ST., PHILADELPHIA.

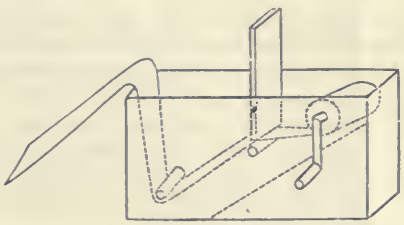
NEW INVENTIONS.

A MACHINE FOR PREPARING PLASTER BANDAGES.

BY G. G. DAVIS, M.D.,

ASSISTANT SURGEON TO THE EPISCOPAL AND ORTHOPÆDIC HOSPITALS, PHILADELPHIA.

HAVING occasion to use plaster bandages frequently, and the machines at hand not working satisfactorily, the following was devised: A box was made, fourteen inches long, five inches wide, and about seven inches high. A winch, made of thick wire and filed flat on its sides and tapering, was placed at one end of the box, and a round peg three-fourths of an inch in diameter placed from side to side in the opposite corner. One edge of the end of the box was rounded off to allow the bandage to glide over it. The bandage is passed over the rounded edge down under the peg, and wound on the winch. A sloping false bottom placed inside causes the plaster to gravitate to one corner. Between the winch and the peg in the corner, a little above a straight line joining the two, is placed another peg. The bandage passes over this peg on its way to the winch. Slots are cut in the sides of the box and a board a quarter of an inch thick placed in it, its lower edge being slightly rounded and resting on the upper surface of the bandage as it passes over the peg. It is kept firmly pressed down on the bandage by a couple of rubber bands (not shown in the illustration) passing from the top of the board to tacks driven in the sides of the box.



The bandage being passed over the edge of the box, it is carried beneath the peg in the corner, between the peg in the middle and the upright board, and fastened around the winch. Fill the box with plaster up to the middle peg. On turning the crank the bandage is carried through the plaster, over the middle peg, the upright board grinding the plaster in and scraping off the surplus, and then wound around the winch. If desired, a wedge-shaped strip of tin with a slot cut in the broad end may be used to carry the bandage beneath the first peg. The bandage being threaded in the slot the tin is passed under the peg, and drawn out, the bandage following.

It is almost useless to attempt to prepare bandages by any machine that does not rub the plaster in the meshes of the stuff, or that winds them while they are nearly or quite vertical; in either case the result is that the plaster drops out and the bandage is useless. The only objection that has yet been made to this machine is that it rolls the bandages so tight that they require rerolling before use. Practically, this does not amount to much, and the machine will be found to work fairly satisfactorily.

NEWS ITEMS.

An Official Investigation of Artificial Foods.—At the recent meeting of the Association for the Advancement of Science, Dr. F. Hoffman, of New York, read a paper on infant foods, in the course of which he stated that the chemists of the United States Agricultural Department were about to begin the work of investigating the different artificial foods and infant foods now on the market.—*The Medical Record*, September 14, 1889.

Leprosy in Hawaii.—It is estimated that there is one leper to every forty of the inhabitants of the Sandwich

Islands. Speaking of leprosy, we notice that a Chinese leper was recently discovered in the Sacramento jail. He had been sent there for refusing to pay a poll-tax.

Poisoning with Corned Beef.—Thirty-one persons at Findlay, Ohio, were poisoned by eating corned beef, and it is feared that some of the cases may terminate fatally.

The Congress on Hypnotism.—The following resolutions were adopted by the International Congress on Hypnotism held in Paris last month:

1. Public exhibitions of hypnotism or magnetism should be forbidden by government.

2. The use of hypnotism as a therapeutic agent should be restricted to practising physicians.

3. It is to be hoped that the method and practice of hypnotism will be included in the medical education of students.

Jelly-fish Sting.—Bathers who have encountered the long tentacles of a medusa will be pleased to know that the "sting," or erythema, may be speedily relieved by the application of water rendered alkaline by common washing soda, in the proportion of an ounce of soda to about two quarts of water. Dr. B. M. Richardson states in the *Asclepiad* for September, that he has personally tested the efficacy of the treatment, and has also used it successfully in several severe cases.

The Dangers of Carbolic Acid.—The following letter of Dr. Th. Billroth, of Vienna, has been published: "I have lately seen four cases, in which fingers which had suffered a most insignificant injury became gangrenous through the uncalled for application of carbolic acid. Carbolic acid is now much less used in surgery than formerly; we have only gradually become acquainted with its dangers. The acid may not only cause inflammation and gangrene, but also blood poisoning, and so may even prove fatal. It is useful only in the hands of a skilful surgeon, and ought never to be used without his advice. The best lotion for recent injuries is the ordinary lead lotion, which can be bought at any chemist's. The best antidote in carbolic acid poisoning is soap, which should be taken immediately and repeatedly until all symptoms of poisoning have disappeared." —*Lancet*, August 31, 1889.

Female Medical Students in India.—Female medical students in India need not complain of lack of encouragement. The Viceroy of India, during his term of office, has placed at the disposal of the Central Committee of the Lady Dufferin Fund five silver and two bronze medals for annual competition among the female medical students.

Medical Minims and Surgical Saws.—We quote the following useful axioms from the *Boston Medical and Surgical Journal* of September 5th:

The most effective instrument in medical surgery is the nail-brush.

The patient's interest in his own case is clinical; it is rarely pathogenetic, and never necroscopic.

A long prescription maketh no one fat but the druggist.

Better is aqua fortis with a ready stomach, than the best drug of the pharmacopœia and retching therewith.

Woman has some organs outside the pelvis.

Berlin makes a physician learned; Vienna skilful; the bedside wise.

The same channel brings their bread alike to the harlot and to the virtuous midwife.

The truly *necessary* calls upon a physician will about suffice to pay his tythes.

In the domestic republic the family physician is nominated by the husband, but confirmed in executive session by the wife.

The good medical Samaritan must needs look to it lest he be sued for the quality of his wine and oil, the speed of his beast, and the roominess of the quarters he provides in the inn. Albeit he gives of them all the best he has, he may find that the one who has most fallen among thieves is himself.

London Post-graduate Courses.—It has always been a reproach to London that the unrivalled clinical material of its numerous hospitals is not fully utilized for the purposes of medical education. It is not that teaching power is wanting, says the *British Medical Journal* of September 7th; on the contrary, the metropolitan schools could furnish among them a body of men thoroughly fitted to make London the centre of the medical world, as it undoubtedly ought to be. Owing to want of organization, however, a large amount both of material and teaching power is wasted. Nowhere is the loss of potential educative energy more evident than in the hospitals to which no medical school is attached. It is, therefore, with peculiar satisfaction that we hail the announcement that the medical staffs of several hospitals have decided to unite their forces and give courses of instruction to qualified medical men in the various important branches of medical science and practice which these institutions represent. The teaching is intended to be thoroughly practical, and the convenience of men engaged in the active exercise of their profession has been studied in the arrangement of the hours at which the courses will be held.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 10 TO SEPTEMBER 16, 1889.

By direction of the Acting Secretary of War, the leave of absence, on surgeon's certificate of disability, granted FREEMAN V. WALKER, *First Lieuteuant and Assistant Surgeon*, in S. O. 92, April 20, 1889, from this office, is extended one month on surgeon's certificate of disability.—*S. O. 211, A. G. O.*, September 11, 1889.

By direction of the Acting Secretary of War, FREEMAN V. WALKER, *First Lieutenant and Assistant Surgeon*, is relieved from duty in the Department of Texas, and will, upon the expiration of his present leave of absence, report in person to the commanding officer Jackson Barracks, Louisiana, for duty at that station, and by letter to the commanding general Division of the Atlantic.—Par. 2, *S. O. 212, A. G. O.*, September 12, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, SEPTEMBER 28, 1889. NO. 13.

ORIGINAL ARTICLES.

HOT-AIR INHALATIONS IN PULMONARY TUBERCULOSIS.[1]

BY E. L. TRUDEAU, M.D.,
OF SARANAC LAKE, N. Y.

THE exact value of any therapeutic measure in the treatment of phthisis can only be determined after a considerable lapse of time and a comparison of the clinical reports of different observers made on an extensive scale. The present notes, therefore, which only embrace the study of four cases treated for periods varying from one to a little over four months, can necessarily constitute but a very meagre contribution to the clinical side of the question. Inasmuch, however, as the inhalation of hot air has been put forward as a distinctly antiparasitical method, the report of some observed facts bearing on the bacterial study of these cases may, even at this early date, prove of some value in reaching a conclusion regarding its merits as a specific.

The literature of the subject has until recently been confined to the observations of Louis Halter,[2] published in September, 1888, on the immunity of lime-burners from pulmonary phthisis; to the work of Dr. Krull[3] on hot-air inhalations for tuberculosis, and to a paper published by Dr. Louis Weigert in the *Medical Record* for December, 1888. More recently articles by A. Jacobi,[4] Renzi,[5] Kohschutter,[6] and Sears,[7] reporting the results of their observations in treating phthisis by this method have appeared. Dr. Weigert's claims were to have discovered in hot-air inhalations a specific treatment for tuberculosis, and that this disease could be cured by the use of an apparatus devised by himself for the purpose.

In his article, hot-air inhalations are distinctly put forward as a specific for pulmonary tuberculosis. They are not held to be merely a therapeutic measure of more or less service, and no influence other than their efficacy in checking the growth and multiplication of the tubercle bacillus is claimed for them. Based on well-observed facts relating to the narrow temperature range of this microbe, the diminution of virulence which may be brought about in certain pathogenic bacteria by growing them at high temperatures, and the efficacy of discontinuous sterilization, this plan of treatment is worthy of serious consideration.

Are inhalations of dry hot air capable of preventing the growth of the bacillus tuberculosis in the lungs of living individuals, or of diminishing the virulence of this microbe? The present notes are but a collection of clinical facts and bacteriological observations made by the writer in attempting a solution of this question. The clinical study includes four cases: the first three will be briefly outlined, while the fourth, for reasons that will appear hereafter, will be given more in detail.

These three patients had all been ill less than a year, and presented the rational and physical signs of moderately advanced pulmonary tuberculosis in its first stages; in one only was a small excavation present. The sputum, which contained bacilli in all the cases, was examined every month, and careful records of the vital signs were kept. These patients took the treatment continuously for periods of one month, six weeks, and a little over three months respectively; the time of inhalation was rapidly run up to four hours daily, divided into two sittings, during which the temperature of the inhaled air (as measured by the thermometer on the mouthpiece), was maintained over 200° C. (392° F.).

The results were as follows: In the first and second cases slight improvement in all the symptoms occurred at once, but the patients became discouraged and could not be persuaded to continue the inhalations. The third patient kept up the treatment most rigorously for over three months without the least noticeable effect.

The history of the fourth patient before and after treatment was as follows:

January 28, 1889. R., clerk, aged twenty-three; no family history of phthisis. Taken ill July, 1888, with hæmoptysis; has all the rational signs of progressive pulmonary tuberculosis in its first stages; has lost ten pounds. Both lungs are involved. At right apex prolonged bronchial expiration, with fine and coarse râles both back and front, involving the upper lobe. At left apex breathing good, except under the clavicle, where some fine crackles and loss of breath-sounds prevail. Temperature P.M. daily,

[1] Read before the Association of American Physicians, Sept. 20, 1889.

[2] Berliner klinische Wochenschrift, September, 1888.

[3] Ibid.

[4] New York Academy of Medicine, June 20, 1889.

[5] Morgagni, No. 17, 1889, and Centr. f. die gesammt. Ther., June, 1889.

[6] Inter. klin. Rundschau, No. 10, 1889.

[7] Boston Medical and Surgical Reporter, July 11, 1889.

101½° to 102°; respiration 24; pulse 100 to 120. Expectoration moderate in quantity and purulent.

Began treatment February 18, 1889, and inhaled air at 200° C. to 210° C. (392° to 410° F.) four hours daily, with but trifling intermissions, until June 20, 1889. A complete record of the vital signs was kept, and the sputum was examined every five weeks for bacilli. His condition at the end of treatment (a little over four months) was as follows: *Physical signs*, show marked decrease in the amount of râles, which have entirely disappeared over right scapular region. *Rational signs:* Weight has increased 10 pounds; pulse shows an average decrease of 8 beats; respiration has fallen from 24 to 19 on an average; temperature usually about 2° Fahr. lower; sweats have disappeared; dyspnœa improved; no hæmoptysis; expectoration has diminished two-thirds in quantity and is still muco-purulent in the morning. The improvement reached its height about three months from the inception of treatment; some of the ground gained was slowly lost during the fourth month, though the inhalations were faithfully continued.

This brief clinical study does not furnish evidence which differs materially from that usually obtained on the trial of many specific methods of treatment for tuberculosis hitherto put forward and long ago abandoned. The improvement which manifested itself in one case, though marked, was no greater than was observed to occur at the same time, from climatic and hygienic treatment alone, in several of the man's fellow patients. Whether or no the favorable change noted in his condition can be ascribed to any specific effect produced on the germ element of his disease by breathing the hot air will hereafter be shown conclusively by the inoculation tests to which his sputum was subjected.

These brief clinical notes may be said to furnish no positive proof as to the therapeutic value of the method.

The bacteriological study was as follows: The sputum of all four cases was examined before treatment, at intervals of five weeks during treatment, and as soon as it was abandoned. *In every instance the bacilli were found.* No appreciable influence therefore was produced upon this most important element of the disease.

The claim of diminished virulence was tested in the following manner: Before beginning the inhalations a small portion of the sputum from Case IV. was mixed with sterilized water and injected into the thoracic cavity of three rabbits. The animals were killed five weeks later and a localized tubercular lesion at the site of injection was noted, while transparent miliary tubercles were just visible on the pleura and pericardium. These lesions contained bacilli. The patient having begun to breathe hot air for four hours daily, a small portion of his expectoration was taken every five weeks and injected in the same manner into the thoracic cavity of three rabbits. This was repeated three times—that is, the last set of inoculations was made three months and a half after the treatment had been begun. Each set of rabbits was killed at intervals of five weeks and notes of the autopsies made. They were found to have all developed tubercular lesions containing bacilli, and in the last lot as well as in the others, miliary tubercles occurring at some distance from the site of injection were demonstrated. These tubercles were sufficiently advanced to be macroscopical, and did not differ materially in their appearance from those which had been produced in the animals inoculated with material expectorated by this man before the treatment was instituted. Five weeks being very nearly the earliest date at which secondary tubercle distant from the original lesion appears, microbes capable of causing such manifestations within this limited time can have lost none of their virulence. No diminution in the pathogenic properties of the bacilli seems therefore to have been produced by breathing the heated air.

Although difficult of absolute demonstration, it is most probable that the temperature of the air-cell itself can be influenced but very slightly, no matter how high or how low that of the inspired air may prove to be. The intense vascularity of the lungs, the fixed temperature of the blood rapidly circulating through them (which is relatively low when compared to that of the heated atmosphere furnished by the apparatus), the moisture and infinite subdivision of the surfaces, and the very slow admixture which takes place between the tidal and residual air, all conspire to rob the incoming current of its heat and to confine the possible variations of temperature in the air-cell within very narrow limits.

The inference held out as conclusive that, because the breath on expiration measures as high as 45° C. (113° F.), the air in the air-cells must necessarily be much warmer is fallacious, for the expired air is in a great part composed of the last inspiration still surcharged with its recently acquired heat. As the bacilli in the bronchial secretions must necessarily be brought in much more intimate contact with the hot air than those imbedded in solidified areas of lung or in impermeable tubercular masses, the failure of the latter agent to diminish their virulence to any appreciable degree is most significant.

CONCLUSIONS.

1st. The therapeutic value of hot-air inhalations in phthisis is doubtful.

2d. The evidence obtained by the bacteriological study of the cases presented does not confirm the assumption that inhalations of heated air can either prevent the growth of the tubercle bacillus in the lungs of living individuals or diminish the virulence of this microbe when it has gained access to them.

CHRONIC TONSILLITIS.[1]

BY E. FLETCHER INGALS, A.M., M.D.,
PROFESSOR OF LARYNGOLOGY, RUSH MEDICAL COLLEGE, CHICAGO.

SYNONYM: Hypertrophy of the Tonsils. This affection is characterized either by dilatation of the lacunæ by their retained secretions with hypertrophy of the glandular tissues about them, by distention of the lacunæ without hypertrophy of the glandular tissue, or by simple hypertrophy of the glandular tissue, while the lacunæ are but little involved. About two-thirds of the cases occur in males. The disease is said to be most frequent between the ages of fourteen and sixteen, though it occurs very frequently in younger children, and it is sometimes congenital. It is observed occasionally in middle life, but the tendency to it diminishes with advancing years.

Anatomical and pathological characteristics.—The tonsil is enlarged, and either of a pink, bright red, or yellowish-pink color; but most frequently it is a little lighter than the natural color of the mucous membrane. The bright red color is not common. In this affection the tonsil may measure from three-eighths to one and one-eighth or more inches in diameter, and it usually weighs one or two drachms. In some instances the tissue is very friable, so that it can be readily broken up by the finger, while in others it is exceedingly firm and like fibrous tissue to cut. Usually there will be a collection of secretions in some of the lacunæ, forming little yellowish points at the surface. If a probe is passed into these a considerable quantity of cheesy matter may often be removed. In rare cases the lacunæ are involved with out hypertrophy of the glands: I have seen within the last year several cases in which a number of the diseased follicles with their retained secretions were visible on each side, and yet the whole gland was not larger than normal.

If the gland is very large, it may seriously interfere with respiration so as greatly to impair the patient's general health; the patient being much as one who lives in a cellar, with only half the normal allowance of oxygen. It is claimed by some that hypertrophy of the tonsils increases the tendency to diphtheria in young children, and adds much to the danger from an attack of this disease. Persons with this affection are much more subject to attacks of acute tonsillitis than those in whom the tonsils are not enlarged. In a few cases permanent deformities result from enlargement of the tonsils. The most pronounced of these is the pyriform chest, caused by the upper portion of the thorax being forcibly distended and the lower retracted with each inspiration, until finally the condition becomes permanent. This could hardly happen in a child fifteen or sixteen years of age, but in young children, where the bones are soft and the cartilages elastic, it is an easy matter for such changes to occur.

Etiology.—Among the causes of chronic tonsillitis are: repeated acute attacks of inflammation of the gland, the strumous diathesis, diphtheria, scarlatina, and measles. Occasionally the disease seems to be hereditary, as it is not infrequent to find families in which several members have had hypertrophy of the tonsils, and the parents before them. Chronic follicular pharyngitis is said to be a cause, but appears only a concomitant. Acquired syphilis is sometimes a cause with adults. In May, 1888, Dr. Gradle, of Chicago, presented a paper to the American Medical Association, in which he advanced the opinion that chronic follicular tonsillitis is of bacterial origin. To prove this theory he cited the fact that secretions taken from one of the lacunæ and placed under the microscope will be found swarming with bacilli, though he admitted they were not of a specific variety, but of various kinds. This admission seems of itself almost sufficient to disprove the hypothesis. The decomposition of any animal substance is necessarily attended by the development of a large number of bacilli, and the fact that they may be seen microscopically is no more reason for believing that the bacilli cause the disease than the macroscopic discovery of maggots in a carcass would be for supposing we had found the cause of the animal's death.

Symptomatology—Inquiring into the history of chronic tonsillitis, we frequently find evidence of hereditary origin, but in most cases the patient has suffered from frequent attacks of acute inflammation of the gland, or the disease has had its beginning in an attack of diphtheria or scarlatina. When the tonsils are much enlarged the respiration is more or less obstructed, and the voice is altered in resonance and quality. Partial deafness, due to pressure of the gland upon the Eustachian orifice or to extension of the inflammation, is not uncommon. Occasionally the senses of taste and smell are much impaired as a result of this disease, and it is said that in rare instances even the sense of sight has been affected. Patients rarely experience pain, but not unfrequently they complain of a sensation as of a foreign body in the throat, which they are continually trying to swallow. In children where the disease has existed for a considerable time, the patient's mouth is almost constantly open, the eyes dull, and there is an appearance of lack of intellect which is almost characteristic of the disease. Hoarseness is common, but more frequently the voice sounds as though the patient was talking with something in the mouth. Many of these patients become easily fatigued on taking exercise, because the blood is not properly aërated. Sometimes the obstruction to respiration is not marked in the daytime, but is

[1] Read before the Mississippi Valley Medical Association, at Evansville, Indiana, September 11, 1889.

very pronounced at night as the patient sleeps, and if the tonsils are very much enlarged it may be extremely difficult and so noisy that it is impossible for others to sleep in the same room. In rare instances there is actual danger of suffocation. I have seen two cases of chronic tonsillitis in young children where I thought it a very serious matter to allow the glands to remain for even a few days. Cough is sometimes, though rarely, present. It is especially apt to occur at night, and may be due partially to the enlargement of the tonsils and partially to the elongation of the uvula, which is a frequent attendant. In young children swallowing is sometimes quite difficult from the mechanical impediment.

The enlarged glands may be easily seen, and usually upon the surface of each the orifices of three or four crypts about an eighth of an inch in diameter are plainly discernible. In some cases, even when the tonsils are much enlarged, as we look into the mouth the gland can hardly be seen and we notice only an unusual fulness on each side of the fauces, until the patient retches, when the tonsils are rolled out so as almost to touch in the middle line.

Diagnosis.—The diagnosis may be easily made by inspection, but occasionally, where the anterior pillar of the fauces hides the tonsil, palpation may be necessary to determine the exact size of the gland.

Prognosis.—When the tonsils enlarge in early childhood they will sometimes disappear about the fourteenth year. Hypertrophy of the tonsils occurring in youth or in early adult life will often disappear about the thirtieth year; however, in the meantime the general health may have been greatly injured, or some of the special senses permanently impaired. We must remember, also, the tendency to frequent acute inflammations, and the possibility that this affection predisposes to serious attacks of diphtheria.

Treatment.—Excision is the most satisfactory treatment, but for simple hypertrophy I am accustomed to recommend those who do not wish operative procedures to moisten the finger, dip it into dried alum and rub it thoroughly into the gland once a day. This treatment must be continued for several months, and will be effectual in some cases in which the glands are quite soft. Another method is to inject into the gland with a hypodermic syringe iodine, ergotine, or carbolic acid. The tincture of iodine may be injected to the amount of five or ten minims; or, in a similar way, ergotine one to ten grains with alcohol, or carbolic acid one to three grains with water or glycerine, commencing always with the smaller quantities. Counter-irritation has sometimes, though not often, been found useful. Linimentum ammonii applied daily about the angle of the jaw will occasionally reduce the size of the glands. Electrolysis has also been recommended, one needle being passed into the tonsil, the other electrode being applied by means of a wet sponge externally, or both needles being inserted in the gland. The method is tedious but sometimes effective. Chromic acid is also used for reducing the glands, either in solution or in the form of crystals. In applying the crystals only a small amount should be used, and it is better to fuse it on a probe so that there will be no danger of its dropping into the throat.

The galvano-cautery has been highly recommended for the reduction of these enlarged glands. When it is used a small pointed electrode about one-fourth of an inch in length and from one-sixteenth to one-eighth of an inch wide should be heated to a white heat and plunged into each tonsil in one or two places at each sitting. The operation should not be repeated in less than three days, and it is usually best to wait a week or ten days. This will eventually reduce the size of the gland, but it is a tedious process. In the majority of the cases twenty or thirty sittings will be required and each one will give the patient almost as much discomfort as the removal of the gland by the tonsillitome. But we occasionally find people who strenuously object to the use of the knife and who will submit to treatment by this method. Occasionally when the glands are soft ten or twelve operations will suffice.

Excision is doubtless the best treatment for the majority of cases. The direction was formerly given, and is still found in some of the works on surgery, that the gland be seized with a pair of forceps and cut out with a bistoury, much care being used to avoid cutting important arteries; but many modern surgeons have come to believe that the tonsillitome is far superior to the bistoury for this operation. I think it is always to be preferred. There is a large variety of tonsillitomes, and of these there are many instruments that will answer the purpose very well, but I have found Mathieu's (Fig. 1) most satisfactory for all sorts of cases. This instrument may be readily taken apart for cleaning or sharpening. It is made in two or three sizes, but the larger will answer for nearly every case, though a smaller one is desirable for young children.

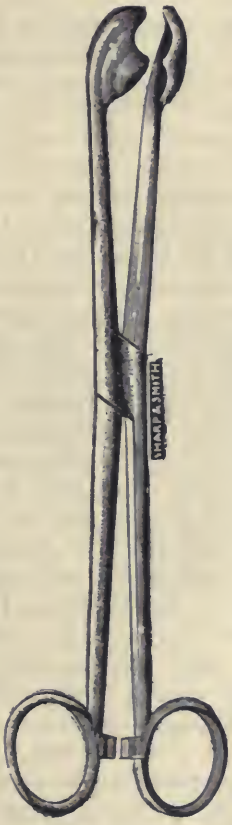
In using any tonsillitome it is well to have an assistant make firm pressure back of the angle of the jaw with the finger in order that the gland may be thoroughly exposed, and whenever it is adherent to the anterior pillar of the fauces the adhesion should be broken up before excision is attempted. In using this instrument place the ring, containing the knife, around the tonsil and with the other hand press it firmly against the side. Then with a single movement of closing the hand, the spear is forced through the gland, the latter pulled well through the fenestrum and at the same time the knife is released and

cuts its way through so that the whole painful part of the operation requires only the fraction of a second. Some surgeons advise simply clipping off the surface of the tonsil, hoping that the remainder may be absorbed, but I believe it is far better to remove all the diseased mass, if possible, and the nearer we come to this the better it will be for our patient. Remember that in the perfectly healthy throat no tonsils can be seen.

FIG. 1.

Mathieu's tonsillitome.

FIG. 2.



Ingals's tonsil forceps.

There are some cases in which the patient is subject to frequent attacks of tonsillitis, but in whom at other times there is very little enlargement of the gland, so that it cannot be removed when inflammation is not present. In such cases Lennox Browne recommends us to wait until inflammation and swelling of the gland occur, and then to remove it, as this is the only way in which a thorough operation can be made. There is a serious objection to removing a tonsil when inflamed, in that it is liable to bleed excessively, but in the cases just mentioned there is no choice unless we adopt other methods of destroying the gland. The galvano-cautery seems to me best adapted to the treatment of these cases. In the only instance where I have followed Mr. Browne's suggestion alarming hemorrhage occurred and continued in spite of all the approved methods of checking it until the patient fainted.

It is usually an easy matter to remove the tonsils in adults or in tractable children. But if the child from fright or other reasons refuses to submit, it must be held by main force, and the mouth must be pried open, and the teeth kept apart by a gag, if the ordinary operation is to be performed. But with most children it seems to me a cruel thing to operate in this way. I do not think an adult could suffer more mentally, going to his own execution, than a little child in having the tonsils removed. The first tonsil might, in many instances, be removed without much distress, but the removal of the second inflicts an amount of torture which children should not be called upon to endure. It is my rule with all children who are timid about the operation to administer chloroform or ether, and remove the glands with the steel-wire snare.

Exceptionally we find the tonsil of such form that it may be easily caught by the snare, but usually the wire will not hold. To overcome this difficulty I have had made a tonsillotomy forceps (Fig. 2) which gives perfect satisfaction. It is so constructed that as the blades grasp the tonsil the wire may be easily slipped over them, and must necessarily engage the base of the gland. To remove the tonsils by this method the child is first given an anæsthetic, and laid upon its abdomen with the face close to the edge of the table, then the gag is introduced and the mouth opened widely. The forceps are held by the thumb and second finger of the right hand, like an ordinary dressing forceps. The loop of the snare is then slipped over the blades toward the joint of the instrument, and the snare itself is supported by the little finger of the same hand. While an assistant presses the tonsil inward with his finger behind the angle of the jaw, the operator passes the blades of the forceps back to the pharyngeal wall, and then, as they are opened, draws them forward against the anterior pillar of the fauces, when they are pressed firmly down above and below the tonsil with care to engage simply the gland. The blades are then locked, and the loop of the snare slipped over them and tightened, when it will slide down beneath their ends and cut off the mass. As soon as the snare is firmly applied the forceps may be removed if desired. When the tonsil has been caught properly, the wire loop will slide under it, and the whole gland will be enucleated. In this operation there are two points for special caution: Be careful not to injure the anterior pillar of the fauces with the forceps, and not to engage the tip of the uvula in the snare as it is slipped over the blades.

I have usually used two snares in performing the

operation; having caught the first tonsil and tightened the snare, the forceps have been disengaged and applied with the snare to the other tonsil before the first one was removed, the object being to prevent bleeding until both glands were secured. There is one objection to this method—the first tonsil may be easily secured, but being drawn out of its bed fills the fauces so that it is sometimes difficult to catch the other.

In my recent operations I have taken out one tonsil, have then turned the child over, put the gag in the other side of the mouth and removed the other gland in the same way as the first. There is very little bleeding, and as the child is turned upon its face none of the blood can run down into the trachea. After the operation a spray or gargle containing about five grains of carbolic acid to the ounce of water, should be used every two hours when the child is awake, until the throat has nearly healed. If pain is complained of, troches of althea may be used freely, or a small amount of deodorized tincture of opium may be added to the local application.

There are some cases of chronic tonsillitis in which the follicles are mainly involved and the glandular tissue is not sufficiently hypertrophied to require removal, but in which the diseased follicles are constantly filling with secretions which give the patient more or less discomfort and sometimes actual pain, and often cause an offensive breath. This is frequently a source of much alarm to the patient. The treatment usually recommended for this condition consists mainly in the application of caustics. Most authors recommend that all the secretions be carefully squeezed out of the crypts and then either chromic acid or nitrate of silver be applied, fused on a small probe. Applications should be made to only two or three follicles on each side at each sitting. This is effectual in some cases; however, there is no method so satisfactory as cauterization by means of the galvano-cautery. Some laryngologists recommend that the secretions be carefully squeezed out of the crypts before using the galvano-cautery, but it is entirely unnecessary. I use an electrode, the point of which is about half an inch in length by one-eighth of an inch in breadth, which is tested at the time with a current sufficient to heat it to a white heat in one second. This is passed to the bottom of the crypt and the current turned on until the tissues begin to sizzle and smoke; the current is then shut off, the instrument withdrawn, and the operation is completed. I usually cauterize two or three crypts at each sitting, and only those in which I can see the secretions. Cocaine may first be used to prevent pain, but is not generally needed.

There are some cases where it is impracticable for the physician to use any form of treatment a sufficient number of times. These patients may sometimes be able to use the nitrate of silver themselves, if they are shown how to fuse it upon the end of a probe, and to pass it into the crypt. By persistent treatment in this way a cure may usually be effected.

After the removal of enlarged tonsils there is sometimes considerable hemorrhage. The most approved means for checking it are: holding bits of ice in the mouth and applying ice at the angle of the jaw; holding a sponge firmly upon the stump of the tonsil with a pair of forceps, one blade of the forceps in the mouth, the other outside (the ordinary stone forceps are best adapted to this purpose); compressing the stump of the tonsil with the finger, making counter-pressure with the thumb at the angle of the jaw, and rubbing alum upon the cut surface. Sir Morell Mackenzie recommends a mixture of tannic and gallic acids, two drachms of gallic and six of tannic acid to the ounce of water, which is to be supped slowly, or used as a gargle; this, he claims, will stop the bleeding in most cases. By the use of some one of these means I have always been able to check the hemorrhage, with one exception.

A few cases have been reported in which the hemorrhage has been alarming, in some of which the carotid artery has been tied to stop the bleeding, though with equivocal success. One of these which occurred in the practice of Dr. S. E. Fuller, of Brooklyn, two years ago, an account of which was published in *The American Journal of the Medical Sciences* for May, 1888, was widely quoted both by medical journals and the daily press. In that instance the common carotid artery was finally tied, but bleeding did not cease until after the patient fainted. Dr. D. Bryson Delavan, of New York, has shown that tying the carotid artery has but little effect upon bleeding from the tonsil. He suggests that in cases of bleeding after tonsillotomy, fainting should be induced as soon as possible, and to facilitate this and yet prevent excessive hemorrhage, he recommends that the arms and thighs be ligatured close to the body, the patient kept erect, and the bleeding allowed to go on until fainting occurs.

A patient recently came to my clinic on account of frequent attacks of acute tonsillitis. I found that the glands, excepting when inflamed, were not large enough to be removed; therefore, as an acute inflammation was just coming on, I waited a couple of days and then, before the class, removed the glands with the tonsillitome. The glands at the time were not larger than a small almond. The immediate hemorrhage was not excessive, but at the end of my lecture I found that the patient was still bleeding freely. The patient was left in charge of my assistants, Dr. C. H. Guibor, of Beloit, Kansas; Mr. B. W. Sippey, and Dr. A. R. Wittwer, of Cook County Hospital, by whom all of the ordinary methods which I have enumerated were tried one after the other in this case, besides gargles of turpentine, hot

water, and iced alcohol, but none of them checked the bleeding for more than ten or fifteen minutes, until, finally, the patient fainted, after which the bleeding did not recur.

Many patients will ask if removal of the tonsil will alter the voice? I would answer, it cannot injure the voice, and will usually improve it. There is an impression among the laity that removal of the tonsils will in some way injuriously affect the generative organs. I need only mention it to tell you that it is absurd, and that there is no foundation for the belief.

OPEN-AIR TRAVEL AS A CURER AND PREVENTER OF CONSUMPTION,

As Seen in the History of a New England Family.[1]

BY HENRY I. BOWDITCH, M D.,
OF BOSTON, MASS.

"For my own part, I intend to hunt twice a week during my stay with Sir Roger; and I shall prescribe the moderate use of this exercise to all my country friends as the best kind of physic for mending a bad and preserving a good one."—*Sir Roger de Coverley*, chapter xiii. p. 101, Goldschmidt, Edinburgh, 1889.

IT is a curious coincidence that, at the same meeting of the Climatological Association, the President should give you some information gleaned from my recorded cases as to the connection of pleurisy with phthisis, and I should present the history of my father, cured, as I believe, of severe phthisical symptoms by a journey in an open chaise, and by persistent daily walking of from five to six miles during the rest of his life. In connection with this I shall endeavor to show that, by the same persistent open-air treatment of his children during their periods of growth, he was able to prevent the occurrence of the same disease in a large number of his descendants, who, in consequence of himself and his wife being tuberculous, and also first cousins, must have been very strongly *predisposed* to it.[2]

I have a record of this journey as kept by my father in 1808, when he was thirty-five years of age. I found it recently, tied up in a bundle of old papers, which had been resting quietly hidden for over half a century. It is a very compact, precisely written statement of that journey, showing, indirectly at least, its benign effects upon him.

It is eminently suggestive to me of the proper treatment of certain cases of phthisis, and in the hope that it will be suggestive to others also, I now lay it before this Society. To some sensitive minds it may seem to be of too private and personal a character to be placed thus freely before any public assembly. I have no such feeling when questions of human health and happiness are involved.

In 1808 my father was undoubtedly threatened with consumption. He had cough, hemoptysis, anorexia, diarrhœa, and general malaise, with fever and great debility. On August 29th of that year, when thus ill, he started, with a friend as his companion and driver, in an open, one-horse chaise for a tour through New England. At that time it will be recollected that there were no cars, and travel was had in one's own carriage or in public coaches holding nine persons. These were driven over turnpikes or private roads. There were hotels, more or less comfortable, at which travellers could sleep and get food in every town. This record lets us, more or less distinctly, into the feelings, physical and mental, of every day of the month during which the journey lasted. A glance at the map[1] will show that the travellers went from Salem, Mass., down into Rhode Island, thence by way of Connecticut up through the hills of western Massachusetts to Albany and Troy, and back through Massachusetts to New Hampshire, Vermont, and Maine, and then to the home from which he started. During the trip he traveled 748 miles, passed through 113 towns and cities, and the time spent in this daily open-air exercise was thirty days. During that time he went through all stages of feeling of mental discouragement and of physical weakness up to a real enjoyment of life.

Allow me to refer briefly to these changes. Starting from Salem (black) with the prominent signs of phthisis, he was so much exhausted, and had hemoptysis after a drive of twenty-five miles to Milton, that the landlord of the hotel advised his friend to take him home to die, as he could not possibly drive to Taunton the next day, as proposed. (I derive this last statement, not from the journal, but from family tradition.) The travellers were both of them plucky, and not only made that next day's journey, but the sick man felt somewhat better at evening, and notes in the latter part of his record

---

[1] Read before the American Climatological Association, June, 1889.

[2] I am well aware that, since the brilliant discovery by Koch of the bacillus tuberculosis, some writers deny that phthisis *can* be inherited. But surely this opinion I cannot think true. All my medical experience is directly against it. Moreover, we all admit that a certain deterioration of the vital power of the whole, or an abrasion of a part of the body, is necessary for the life and propagation of the bacillus and consequent production of *tubercular* phthisis. Hence, as far as active out-of-door life tends to the production of perfect health in a person or a family, it would seem, *à priori*, that the course pursued by my father, which undoubtedly was of such infinite service in his own case toward the *cure* of phthisis, must have been of great use to his children as a *preventive*, by making them all robust from their earliest years. By so doing he *opposed any tendency* to poor constitutions, impressed on them from their births, which tendencies, if they had not been counteracted from early life, would, I believe, have made his descendants easy recipients of phthisis.

[1] A large map was shown at the meeting marked by circles on the towns where the nights were passed. These circles were entirely black at first, indicating great depression of mind and body, and they became gradually lighter, as the patient got better. Those over the last half of the journey were not only free from any shade, but were surrounded by a red border, indicating the comfortable feeling of returning health.

the condition of the country before arriving at Taunton. His fifty miles since leaving Salem had evidently done no harm, but rather good. Anorexia had gone, as he "dined" (with relish, *apparently*, because he could get nothing else) "on bacon and eggs." Arrived at New Bedford next day, he feels able to visit a friend. He examines a factory. He makes remarks on the inhabitants he met and their employments. Though still having some fever, he feels so much better that much darkness is removed from the circle. Still more refreshed after a night's sleep, and having still less fever, he visits a coal mine recently discovered in the vicinity.

From this time there is almost steady improvement. He visits Newport (109 miles from Salem), admires the harbor, but notices its lack of shipping (to which in Salem with its fleets of ships and their long, wealth-bringing East India voyages he had been long accustomed). At Providence (141 miles from Salem) he finds friends and has pleasant meeting with them. Nothing is said of illness. On the contrary, he has his "Rosinante harnessed" the next day, with the intention of driving *out of his intended route*, in order to visit the cotton factories at Pawtucket Falls. Arriving at Hartford (195 miles from Salem) he is altogether better, finds good fare and a fine hotel. He meets there the judges in their circuit, and has pleasant and profitable conversation with them at the hotel at which they were stopping for the night.

At New Haven (256 miles from Salem, and twelve days of open-air travel) he calls on President Dwight, of Yale College, and regrets that the eminent Prof. Silliman is absent. He visits the library, and finds it wanting in most of the modern English, French, and German scientific works he had been so long acquainted with, and had studied in Salem. At New Haven he makes, for the last time, any allusion to his health, in the following words: "I have a little pain in my breast, but my appetite and general health are good."

After this date, till he arrived home, his record seems like that of a common traveller. He makes no complaints, but describes brightly the places, friends, and others met, exactly as if he were well and travelling for pleasure only.

At Albany he makes an especial and extra journey to Troy with a party of transiently met friends, leaving his chaise for nearly two days in the former city. He found the trip "very pleasant." On return to Albany from Albany to Troy, he had driven 432 miles in nineteen days.

Starting for home, he appears delighted while travelling through a "picturesque" country and meeting at the various hotels intelligent company whose society he was able generally to enjoy.[1] He visits the village of Canaan, and describes in detail what he saw of the Shakers, and heard an extraordinary sermon delivered *at* him, among others, as one of the "outside mankind." I forbear quoting from it. His appetite was becoming ravenous; they would not give him at one tavern, as he says, "half as much as I wanted for my dinner." Finally, he arrived home at Salem, so the record states, "in much better health than he had when starting."

His subsequent course in regard to himself and to his children induces me to believe that the journey, though benefiting him immensely, had not wholly cured him; but it had proved to him the absolute need he had of regular, daily, physical, open-air exercise. Afterward, under walks of one and a half to two miles, taken three times daily during thirty years of life, all pulmonary troubles disappeared. He died in 1838, from carcinoma of the stomach, one lung presenting evidences of an ancient cicatrix at its apex, both being otherwise normal. He was sixty-five years old—*i. e.*, thirty years after the journey.

Having thus experienced, in his own case, the vast benefits resulting from constant, regular exercise out of doors, he apparently determined that his children should be early instructed in the same course. As soon as we were old enough, he required of us daily morning walks down to a certain well-known divine's meeting-house, about three-quarters of a mile, or a mile, from our home. I remember them very well for the tricks played with my brothers on our way down, and for sundry twinges of conscience, felt even at this moment, at the thought that we sometimes decided that the *sight of the "weather-cock* on Dr. Bentley's steeple," though seen more than a quarter of a mile from our proper destination, was near enough to our father's directions!

If any of us, while attending school, were observed to be drooping, or *made the least pretence* even to being not "*exactly well*," he took us from school, and very often sent us to the country to have farm-life and out-of-door "play to our hearts' content." Once he told me to go and play, and to "stay away from study as long as you choose." In fact, he believed heartily in the old Roman maxim, of a "a healthy mind in a healthy body."[1] In consequence of this early instruction, all of his descendants have become thoroughly impressed with the advantages of daily walking, of summer vacations in the country, and of camping out, etc., among the mountains. These habits have been transmitted, I think, to his grandchildren in a stronger form, if possible, than he himself had them.

You will readily agree with me that such habits

[1] This was not always the case, however, for at one town he met one gentleman, "a member of Congress," who was apparently stupid enough. "He scarcely spoke a syllable during the evening."

[1] Mens sana in corpore sano.—Juvenal.

are among the surest guarantees against the prevalence of phthisis in a family. Before detailing the actual result of these habits upon our family, I must state the prospective chances of our escape from the malady. My father married his cousin, who, after long invalidism, died of chronic phthisis in 1834. Certainly a consanguineous union of two consumptives foreboded nothing but evil. They had eight children (born respectively in the years 1805, 1806, 1808, 1809, 1813, 1816, 1819, 1823). Two (born 1809 and 1813—*i. e.*, one and five years after the journey) died, one at eleven and the other at birth. All the others either are now alive, or they arrived at adult life and married and have had children and grandchildren, but not a trace of phthisis has appeared in any of these 93[1] persons.

Now I ask the consideration of this question: To what cause can we attribute this extraordinary immunity from the disease which is generally regarded as showing the influence of heredity and of consanguineous unions more, perhaps, than most other complaints?

If any one can see any other explanation than the influence of this original journey upon the health of one of the great-great-grandparents, conjoined with his wise management of his own health subsequently and his fastening upon his descendants, even to the present day, the virtues of open-air life, I hope he will frankly say so. Truth should be forever our motto, and the man who will convince me of the error of any scientific, or apparently scientific, statement I may utter, and which, if not corrected, may lead others astray, I regard not as an opponent but as my foremost friend.

I submit these facts and thoughts for candid, mature, and *practical consideration* and *use* in the treatment all are called to make of this terrible scourge of all parts of this Union. For my own part I fully believe that many patients now die from want of this open-air treatment. For years I have directed every phthisical patient to walk daily from three to six miles; *never* to stay all day at home unless a *violent storm* be raging. When they are in doubt about going out, owing to "bad weather," I direct them to "*solve the doubt*, not by staying in the house, but *by going out.*"

A cloudy day, or a mild rain, or the coldest weather should not deter them. If the weather be very cold, let them put on respirators before leaving the house and be thoroughly wrapped in proper clothing for the season. I direct them never to stand still and gossip with friends in the open street, as by so doing they are much more liable to get a chill than while walking. Hence, summer and winter alike, my patients usually get plenty of fresh air uncontaminated in a great part, at least, by the previous breathing of it by themselves or by other occupants of the house. This course, I believe, might be pursued in any part of our common country. I am certain that I know of patients who have become well and able to attend to the business of life under this course. May we not also at times send our patients over short distances in open vehicles, instead of thousands of miles off in ill-ventilated cars to an entirely different climate? Have any of us ever sufficiently tried this open-air journeying *at home*, so to speak—that is, in the region of the country where the patient lives, wherever that may be?

Certainly this proposed course has, at least, two sound physiological principles in its favor, viz.: A gentle exercise, for many hours in each day, of the whole frame, and an almost perpetual change of air drawn in with each respiratory act, as occurs while driving in a carriage, open at the front, and in walking. I have no objection to drugs, properly chosen, and I almost always administer them; but if the choice were given me to stay in the house and use medicines, or to live constantly in the open air without them, I should infinitely prefer the latter course in case of my being threatened with pulmonary consumption.

[1] The number of their descendants amounts now (1889) to 8 children, 31 grandchildren, 50 great-grandchildren, 4 great-great-grandchildren—total 93. It may be noted that of the two who were born in 1809 and 1813, one died when eleven years old (1820) and the other at birth (1813), while the writer and reader of this paper was born twenty days *before the journey began.*

NOTES ON THE PREVALENCE OF DIPHTHERIA AT HIGH ALTITUDES.[1]

BY S. H. CHAPMAN, M.D.,
OF NEW HAVEN.

IN August last, during an excursion to Franz-Josephshöhe—9500 feet high—into the heart of the great glacial region called Gross Glockner, in Eastern Austrian Tyrol, my guide related circumstances of an epidemic occurring during the early spring of the preceding year, in his native village of Heiligenblut, which aroused my curiosity.

On my return to the village of Heiligenblut, which is the starting-point of all excursions into that region of snow, I made inquiries of the factota of the village; of the hostess of the inn, who is the chief personage in all Tyrolean villages; the priest; and the telegraph operatress. Their statements verified and amplified those made by my guide.

Upon my return to Lienz, the nearest post and railway station, I called upon the only physician of the town; who, while being the only physician within a radius of thirty miles, is also the military surgeon in charge of the government hospital for the district of Lienz, and, therefore, a personage of authority and influence. He received me with great

[1] Read before the American Climatological Association, June 25, 1889.

cordiality, and gave me an accurate description of his share in the epidemic, and as accurate statistics of the epidemic as was possible to one who had kept no special record of it. He enlarged the field of my search by describing outbreaks in Lienz proper and in a village called Windisch-Matrei. His statements as to the latter were also verified by the hostess of the inn at that place. These data, culled from various sources, I have briefly transcribed, with such descriptions of localities and circumstances as may tend to illuminate the whole.

The architectural and ground plans of Tyrolean houses are the same; the size only varying according to the wealth of the proprietor. This general plan has been perpetuated for hundreds of years, having been found the best to fulfil certain absolutely necessary conditions of living in so rough a climate. A wide entrance hall, ending in a stone staircase leading to the sleeping-rooms above, paved with stone and roofed with heavy arches of stone, is effectually closed in winter by massive doors. The only entrance in winter is through a narrow door let into one of the great panels. On one side of this hall are two entrances, seldom closed by doors; one into the great stone kitchen and the other into the living room; the only rooms occupied except at night. On the other side of the hall is one entrance, always open, leading into a broad and deep stable. Here are kept the horses in summer, while the sheep, goats, and cattle are on the Alps, high up above the village. But with the first heavy fall of snow the cattle are driven down from the hills. The sheep and goats, horses and cows, pass through the narrow entrance, the huge doors are shut, and there they remain throughout the long winter.

The fluids and solids which naturally accumulate with rapidity, are, occasionally, transported, with some slight attempt at cleanliness, to a great stone pit enclosed by the walls of the house, but situated directly to the rear of the stable. Still the cattle stand fetlock deep in mire. The animal heat from so large a number is so great that the temperature in the stables stands steadily at that of June; finding an escape through the always-open door, the heated air warms the hall; mingling with the heat of the kitchen fires, it diffuses itself through the living-room, and escapes up the staircase to the sleeping-rooms above. An effective and economical steam-heating system.

Lienz, 3100 feet above the level of the sea, is a town of a few thousands of inhabitants. It is situated on an extensive plain, surrounded by mountains. A swift-running river passes through it, into which all the drainage, which is altogether on the surface, runs.

Windisch-Matrei, 3700 feet, is a village of a few hundred inhabitants, situated on a spur of a great mountain, overlooking a deep valley. Mountain torrents rush through it; its single street is paved with cobbles.

Heiligenblut, over 5000 feet above the sea, hangs, like a swallow's nest, to the side of a precipitous incline, hundreds of feet above the brawling stream of ice-cold water fed by the great glaciers four thousand feet still higher. The stones of its single narrow and tortuous street are washed by the constant overflow of a torrent which rushes past to meet the stream in the gorge below. The scenery is forbidding. The surface of the ground seems stone, polished smooth by the storms, and glistening dry under the noonday sun.

Heiligenblut has about half the population of Windisch-Matrei. From June to October a telegraph station is located here. For the rest of the year the post-wagon twice a week, except when winter's snows have covered the roads deep; then communication with the outside world entirely ceases, except for some random visitor whom the Government makes its temporary postman. For six weeks, at least, previous to the outbreak of diphtheria, all witnesses alike testified that Heiligenblut had been entirely isolated.

During the summer the journey from Lienz takes more than twelve hours, so that travellers are accustomed to halt over night. For half the distance the road is too narrow for the ordinary carriage, and so steep and dangerous that one prefers to trust to feet rather than wheels. The road to Windisch-Matrei is, however, a good post-road, and by no means so long or hard. Winter closes upon Heiligenblut in September, and does not let go its hold before the middle of May. In fact, throughout the summer, in sheltered nooks on a level with the village, there are still reminders of winter's severity in the shape of banks of snow.

Early in February, 1887, the only child of the richest peasant of the valley, a boy of ten, sickened and died in three days. The symptoms, as related by the peasant, were grim in their simplicity: "The lad was well; all at once he couldn't swallow; his neck was swollen, and his throat very sore; then suddenly he died." There were no other cases of illness until after the first of March—not such a March as we ordinarily have, but a March of blizzards, of Arctic cold and of snow six to eight feet deep on a level. Then, simultaneously, many children were attacked, and died.

At the end of a week of the "plague," as the peasants called it, notwithstanding the danger attending the journey, a messenger was dispatched for the doctor, who, after a toilsome journey of two days, reached the village. The physician pronounced the disease diphtheria of a virulent type. His treatment consisted of insufflation of sulphur, and poultices to the neck.

His treatment was so unsuccessful that the peasants

had recourse to charms, prayers in the church night and day, and to the aid of an aged peasant—a kind of oracle in the village—whose treatment, the peasants averred, saved more lives than did that of the doctor. It consisted of an ointment of sweet cream and powdered gunpowder.

The physician's statistics were—sixty cases, forty-eight deaths. By the end of March the disease had disappeared. The disease was entirely unknown to the oldest inhabitant. The description of the disease by the physician was somewhat meagre—he adding, to the account by the peasant who lost his son, only these facts: The crisis was reached in from two to three days; besides the swelling of the glands and inflammation of the throat, there was often severe hemorrhage from the nose preceding collapse. There was no attempt made to isolate cases.

Early in April—carried in the clothing of a victim of the outbreak—the disease appeared in Windisch-Matrei. This bundle of clothing was taken over the mountain direct to the latter village, by a route that makes one of the most delightful excursions in summer. But the virulence of the poison had become much attenuated—to such a degree that ten cases only occurred, and of these, six died.

From Windisch-Matrei the disease was caried down the valley to Lienz, appearing there in the latter part of April. The statistics of its outbreak there, however, are too obscure to be relied upon, the evidence going to show that but few cases occurred, and that the mortality was less than half.

The physician considered the disease atmospheric, non-contagious, and uninfluenced by treatment of any sort. As an illustration of his theory, he related the following case: In a family of nine children of poor people, occupying two or three rooms only, two children under ten were simultaneously attacked. Treatment was—nothing. One recovered, the other died, and the remaining seven escaped the disease altogether, notwithstanding that the cases were not isolated.

I have ventured to relate these incidents, perhaps less concisely than was necessary, because of the interest attaching to the question of the development of diphtheria at so high and isolated a spot. It seems possible, from the foregoing data, to draw the following conclusions:

That the latent germ was stimulated into active development in the steaming, fermenting, fevered atmosphere of the stable.

That its virulence was rather increased than diminished by the high altitude and by the rarity and low temperature of the air.

That propagation from house to house was not hindered by the passage of the germ through a rarefied air of very low temperature.

That the impulse of the germ became less and less violent as time elapsed after its first appearance.

That the history of this epidemic seems to show that there took place a special culture of the specific microbe, in definite quantity; that all the cases were attacked by the originally developed microbe; but that, under the wearing action of time and atmospheric conditions, its virulence became more and more attenuated until it again passed into a harmless period of existence or became scattered in localities unpropitious for further development.

HOSPITAL NOTES.

JEFFERSON COLLEGE HOSPITAL.

CLINIC OF J. M. DA COSTA, M.D.

(Reported by E. P. HERSHEY, M.D., Clinical Assistant.)

DIABETES INSIPIDUS CURED BY ERGOT.

October 11. H. Y., æt. seven, last March had an attack of mumps; during convalescence jaundice appeared and remained two or three months. Since April 1st he has complained of great thirst, shortness of breath at night, has great difficulty in breathing and he passes large amounts of water, *i. e.*, six quarts in the twenty-four hours. There is no history of malaria. The appetite is variable. Temperature 99.2°. The heart is excited, there is an extended impulse. No increase in percussion dulness; no murmur. The first sound is slightly increased; the second sharp. There is nothing in the heart to throw light on the case. The lungs are normal.

The tongue is slightly coated, particularly toward the back. The skin is extremely dry, and so marked at night that the mother has to wet it. There is no history of an injury. The digestion has been poor for the past four years. At times the bowels are loose, at others constipated. Early in the case there was flatulency, not so now. A thorough examination for sugar failed to reveal its presence. The specific gravity 1002, acid, pale, and no albumin.

Although no sugar is found in the urine in diabetes insipidus, there is a question whether or not there is something which takes its place, as characteristic of this affection as is grape sugar of diabetes mellitus. Inosite is a variety of glucose occurring in the muscular substance of the heart and other organs of the body, and is said to have been found in the urine of this form of polyuria. Should this be established we may be able to get at the cause.

The ordinary diabetic sugar is not present here. The dryness of the skin, the patient once having had itching and extreme thirst, are like saccharine diabetes.

The most common idea as to the cause of this affection is, that it is due to a state of depressed innervation. It is seen in the recovery from low forms of fever. Women who have much mental anxiety, and not necessarily hysterical, have it. To the category of causes, too, are referred blows and injuries to the head, which bring about the affection by disturbing brain centres; and it has been found in lesions irritating the floor of the fourth ventricle.

The prognosis is favorable. Formerly it was very unmanageable, but since the action of certain medicines has been ascertained, there has been decided advancement in the treatment.

The diet is of no great importance. A mixed one is permitted. Meat, green vegetables, etc., most easily digested may be eaten. Regulate but do not restrict the diet. In order to insure digestion, we shall give him liquor pepsini ℥ss to ℥j at each meal. Look for medicine that will contract the vessels of the kidneys. Ergot is the most valuable here. Some years ago I published eight cases cured by this method; since that, nineteen or twenty were cured by it. Give enough ergot and you will get good results. ℞. Ext. ergot f℥ss three times a day. Caution the patient to drink as little as possible. Take small pieces of ice. For dryness of skin rub in vaseline at night. Another remedy has come up, which has already gained so much notoriety in other affections. Antipyrin grs. ij three times a day is supposed to have a great effect in polyuria. Should we fail with ergot we shall try this remedy.

The patient made an entire recovery.

MEDICAL PROGRESS.

Treatment of Diphtheria with Acid Sublimate Solution.—It is to be regretted that the enthusiasm of medical investigators is not more circumspect. Physicians, as a rule, are too apt to endorse a remedy, and claim for it undisputable curative properties when, perhaps, their own experiences have been most meagre. True, the profession as a whole is of a sanguine nature, and not disposed to be over-critical; and, therefore, newly advanced therapeutic measures when even of but doubtful efficacy will always find scores of ardent advocates. The diseases which fall prey to such "new cures" are invariably those whose therapy is still a matter of debate and investigation. Foremost among these is diphtheria, and glaring headings announcing, "A Cure of Diphtheria," stare at us from the pages of the vast majority of journals that pass through our hands. The results of long and careful investigation, and conclusions based upon numerous results and honest conviction are, however, always to be welcomed.

It is now considerably over a year ago that DR. RENNERT, of Frankfort-on-the-Main, first treated a case of diphtheria with local applications of acid sublimate solution. Since then sixty-two cases of this disease have been similarly treated by him. In every instance the treatment was entirely successful, and now Dr. Rennert submits, in the *Berliner klinische Wochenschrift* of August 26th, the results of his labors to the profession.

Rennert's attention was first called to the utility of the addition of acids to disinfectants by Laplace's article on the subject. He then used acid sublimate solution with great success in the treatment of wounds. The primary results obtained by him when first using the solution in diphtheria so typically describe its action that we reproduce a brief account of the cases:

A vigorous, healthy child had, in spite of all his endeavors, just died of diphtheria. When calling a few hours later, the mother complained of dizziness, headache, weakness and heaviness of limbs, and irritation of the throat. Upon the left tonsil was a thick, white diphtheritic membrane, the size of a quarter. Rennert wrapped a pad of cotton around a pair of forceps, and, after soaking it in the acid sublimate solution, wiped off the diphtheritic membrane with it. There was slight bleeding from a few points, and these were again washed over with the solution; likewise, the other tonsil. There was no other treatment. The woman slept well all night, and awoke the next morning cured. This day the maid-servant was reported ill. In her case the disease was far more advanced, both tonsils being covered with diphtheritic membrane. The patches were wiped away with difficulty, owing to their adherence to the mucous membrane, but the same treatment was applied. The patient's fever sank immediately. The remedy was again applied in the evening and on the following morning. On the evening of the second day she was cured.

Encouraged greatly by these most satisfactory results, Rennert proceeded to test the treatment in a number of cases. The choice of cases in which the acid sublimate solution only may be used is restricted to such in which it is possible to remove all the diseased membrane. Where this is impossible, other therapeutic agents should be used in connection with the solution. In one case of diphtheria extensively affecting the nose, a three per cent. solution of boric acid, locally, was used with great success in connection with the sublimate applications. The intensity or nature of the disease, whether croupous or membranous, should not contraindicate its use.

Regarding the technique of the method, the solution used was composed of 1 part sublimate, 5 parts tartaric acid, and 1000 parts water. Laplace's experiments have shown that this formula exerts a far more intense and rapid germicidal action than a simple sublimate solution of the same strength. For its application Rennert uses a wad of cotton about an inch long and half an inch thick when wrapped around a pincette. After soaking the wad in the solution, he proceeds to wipe off the diphtheritic membrane with it. This is frequently not done without considerable difficulty, and the use of three to five cotton wads are necessary for one side. After the membrane has been entirely removed, wounded surfaces will be left which almost invariably bleed slightly. Then the entire pharynx should be swabbed out with a larger cotton wad soaked in the solution. This procedure should be repeated every six or twelve hours. In the majority of cases the patient is free from fever after the second application, but it should be repeated every morning and evening until healing is complete. The results of the treatment have already been referred to; sixty-two cases were treated, and all recovered. It seemed that the disease was invariably speedily aborted. When the malady was so far advanced that it was impossible to reach or remove all the diseased membrane, Rennert did not attempt to remove completely any of it, excepting that which came away quite easily, but repeatedly touched the diseased surface as far as he could reach with the solution. Simultaneously Rennert treated twelve other cases with other remedies; two died, seven very light cases recovered, and two recovered only after the other remedies had been discarded and acid sublimate solution substituted.

The danger of sublimate poisoning during this treatment is absolutely *nil*. Rennert, by careful measurement, found that the usual cotton wad employed soaked up seven minims of the solution, and the larger wads used at the close of each application sixteen minims. As he never used more than ten or twelve wads in one application, therefore scarcely one and a third fluid-drachms, the amount of sublimate was only one-four-

teenth of a grain; and considering that the majority of this was lost through expectoration, poisoning from such a quantity would be impossible. Rennert strongly points out the absolute necessity for a thorough carrying out of the treatment, and the absolute worthlessness of doing it half way.

The Sacral Operation in Gynecology.—The new method of sacral extirpation of the uterus and uterine tumors is gaining ground in Germany. Recently DR. HOCHENEGG has performed it successfully in two cases, which are reported in *Fortschritte der Medicin* of August 15th.

His method of procedure was as follows: In the first case, free access to the pelvis was first gained by dividing the recto-vaginal and respectively the recto-vesical septum. The carcinomatous uterus was so strongly adherent that the extirpation could not be completed according to the usual methods. The superficial incision was curved; the coccygis was extirpated and the right wing of the sacrum resected below the third foramen; the attachments with the rectum then divided, the peritoneum opened, and the uterus drawn forward; the vessels were then isolated, ligated, and cut through; the cervix then cut through, and the extirpation completed per vaginam. The peritoneum was partially sutured and both wounds drained.

In the second case, the extirpation was for a tumor firmly attached to the uterus. The growth was situated on the left side, was as large as a man's fist, cystic, and intra-ligamentous. Here also the coccygis was excised and the left wing of the sacrum partly resected. The rest of the operation was performed with blunt instruments as far as possible. On account of the firm adhesions of the tumor to the uterus, the latter had also to be extirpated from the cervix, and was removed through the sacral wound. The isolated vessels were then ligated, the stump of the cervix sutured with silk. The peritoneal wound was packed with iodoform gauze, and the sacral wound left open. Healing was rapidly effected, but for some time a small fistula remained in the sacral wound.

The advantages of this new method of operating are as follows:

1. It is of superior value in such cases where adhesions or fixation of the uterus render extirpation per vaginam technically impossible.

2. By means of this operation the retro-peritoneal lymphatic glands can also be removed, which fact is of great importance, as they are often found carcinomatous. The prognosis is, therefore, more favorable.

3. The operation is also practicable for small tumors which can neither be extirpated by laparotomy nor per vaginam. Greater control of hemorrhage and drainage is possible. Finally, the danger of ligating the ureters is greatly diminished.

Pyopneumothorax Tuberculosus.—The method of the treatment of pyopneumothorax in consumptives is one of the most important questions of internal therapeutics. On the one hand it is the connecting link between the treatment of pleurisy and its accompanying complications, while, on the other hand, it is directly connected with the therapeusis of phthisis in general.

While the surgical treatment of pleural exudations has, of late, been almost satisfactorily determined, still the study of tuberculous pyopneumothorax has yielded but poor therapeutic results. Senator, Fräntzel, and Leyden have been of the opinion that the treatment should be restricted to the relief of the principal symptoms; from time to time the air and exudation are removed from the pleural cavity by means of aspiration, in order to afford temporary relief to the patient. Otherwise the treatment was merely for the phthisical condition.

After surgical interference the patients almost invariably collapse and die. Some patients indeed, offer primarily, a general favorable condition; but are sure in spite of all care, to succumb sooner or later. Weyl affirms that over one-tenth of phthisical subjects develop pyopneumothorax; of these about twenty-five per cent. are still in a well-nourished condition when attacked. The results of "thoracotomy" have been far from encouraging; the cases which survive the operation for any length of time are very few in number.

For the past year PROFESSOR LEYDEN has been devoting considerable time in the study of this complication. In an address published in the *Berliner klinische Wochenschrift* of August 5th, he tells of six cases of pneumothorax which came under his treatment, three of which were operated upon.

The first of these, who died a few days after the operation, was suffering from sero-pneumothorax. Such cases, he holds, should be excluded from the operation, as but slight relief is afforded thereby, and suppuration continues actively even after emptying the cavity. Potain, of Paris, treats such cases by aspiration of the exudate and injection of a similar quantity of sterilized air. In one case of a patient suffering from pyopneumothorax, Potain, after a year of treatment, not only succeeded in curing the pyopneumothorax but also the tuberculosis. A second case reported by Leyden survived the operation for four months. Autopsy showed advanced phthisis, amyloid in liver, bowels, and kidneys.

The third case still lives, ten months after the operation. The patient is a man aged twenty-seven years; thoracotomy was performed and a quart of pus evacuated. After the operation the patient's condition was most precarious. He could eat nothing and had severe dyspnœa. Strength was, therefore, maintained for several weeks by gavage. Leyden is of the opinion that the importance of alimentation is not sufficiently taken into consideration. In all diseases where the danger is chiefly in a wasting of strength, or consumption of tissue, proper nutrition of the patient is of all importance. The required proportions of albuminates, fats, and carbohydrates, should be acurately determined in order to effect an increase of the weight of the body.

The result of his observations have proved to him that the patient needs a greater amount of nourishment than the healthy subject. The patient should be compelled to eat what he needs and not only what he wants. Dujardin-Beaumetz and Debove have both highly lauded the efficacy of increased alimenation, especially in the therapeusis of phthisis.

To effect the proper nourishment of the patient moral and mechanical force are often necessary. The moral force of the physician's authority is valuable, but the use of mechanical force in the shape of the stomach-pump (gavage) is sometimes unavoidable. The choice of foods is most important, and should be of such a nature that the patient can both digest and retain them. Unwaver-

ing care and untiring zeal are necessary, on the part of the physician, in the accomplishment of this point. The ground gained is gained but very slowly and can be lost again only too easily. Upon these principles Leyden bases the therapy of pyopneumothorax, subsequent to the operation of thoracotomy. The process of healing is very slow, and pus will be discharged for a long time, yet when the strength is thoroughly reëstablished the danger from pneumothorax may safely be regarded as past.

Sexual Asthma.—DR. A. PEYER, in *Wiener med. Wochenschrift* of August 22d, asserts that a large number of cases of asthma are due to a sexual origin, both in males and females. The sexual disturbances exert an influence upon the sympathetic nervous system, and this, in turn, calls forth the asthmatic attack. In many instances this may be occasioned by sexual excitement, or by the sexual act; or, again, by nocturnal pollutions.

Peyer quotes also sixteen cases of sexual diseases which were undoubtedly the cause of asthma. In the male sex, eleven cases were spermatorrhœa; these were accompanied by functional anomalies, pollution, and impotence. In five cases of asthma in the female, Peyer diagnosed one case of uterine fibroid, one case of leucorrhœa, one case of vaginal and cervical catarrh with hyperæsthesia of the vulva, resulting from masturbation, one case of uterine catarrh with induration, and one of chronic endometritis.

Lactose, a New Diuretic.—PROFESSOR GERMAIN SÉE speaks most highly of a new diuretic, lactose, which, he asserts, is of special efficacy in dropsies arising from cardiac diseases.

About three ounces of lactose given in solution with rum or menthol, produce a diuretic action which could not be realized with five quarts of milk. Sée allows the patient to take any desired diet during the treatment with lactose. The remedy is not so applicable in dropsies of a renal origin. In the latter class of cases, it is necessary to recur to caffeine. Neither lactose nor caffeine causes any vascular compression, as do both digitalis and strophanthus. Lactose should be continued for about ten days; it would be then well to stop for a time, but it should again be used when necessary.

Germain Sée speaks in the highest possible terms of the drug, and says that in it we have the only positively trustworthy remedy in cardiac dropsies.

DR. DUJARDIN BEAUMETZ confirms the results obtained by Sée, but also states that a similar diuretic action will be observed to follow the similar use of grape-sugar, or glucose.

The Operation and Prognosis of Extirpation of the Tongue.—In Professor v. Volkmann's clinic, in Halle, two methods of extirpation of the tongue are employed; if the tumor is so situated that it can be drawn forward to the teeth, the simple operation with scissors and knife is employed. DR. F. KRAUSE, in describing the operation in the *Deutsch. med. Wochenschrift*, says: The patient is narcotized in a sitting posture, a wire loop passed through the tongue, and the organ then removed by scissors or knife, as may be found most convenient. Spurting vessels are singly secured as divided. After the hemorrhage has ceased, the wound on the floor of the mouth is sutured as far as possible, or if only a portion of the organ is removed, the tip is bent over to the side and the two raw surfaces are sutured together, so that the tongue is shortened but retains its breadth. Should the growth be so extensive that it cannot be drawn forward to the teeth, or should the floor of the mouth, palate, or tonsils be also implicated, the second method of operation, with division of the lower jaw, is employed. The patient is, as in the first method, narcotized in an almost sitting posture, a wire loop passed through the tongue, the organ being also secured with strong artery forceps; if necessary, the canine or first bicuspid tooth is removed; a skin incision is then made from the angle of the mouth to the level of the larynx, the tissues over the jaw being at the same time divided to the bone; the periosteum is freed from the inner surface of the jaw and a strip of metal is passed beneath it. The jaw is then divided with a very thin-bladed amputation saw, under constant irrigation with boracic solution. Hooks are inserted into the maxillary canal, and the two halves of the jaw drawn asunder. The soft parts are now divided in a direction corresponding with the skin incision, if necessary as deep as the great vessels. By this means the whole of the diseased tissue and implicated glands can be removed. Spurting vessels are tied at once. The anterior faucial pillar is always divided, and a large drainage tube is placed immediately behind it and brought out at the lower part of the skin incision, thus allowing all secretion or possibly ingested fluids to escape. The remaining portion of the tongue is sutured to the mucous membrane if necessary. Tampons of iodoform gauze are employed, and the bone is sutured with strong silver wire. As to after-treatment, the patient is supported in a semi-sitting posture, and fed from a long-spouted glass vessel, and after each meal the mouth is washed with 3 per cent. solution of boracic acid. The mortality in the severer operation (in 35 cases) was 5.7 per cent.; in 56 partial resections of the tongue without division of the jaw, there was no death.

The results, so far as known, of the cases operated on are as follows: Of the 35 cases of total extirpation, with division of the maxilla, 2 died in hospital, one in eight days, the second five weeks after operation (pneumonia), 16 are known to have died with recurrence, 3 are known to be alive, 1 only, operated on 6 years ago, having no recurrence. Of the 56 partial extirpations, 37 have been followed; of these 2 died with metastasis, four and six months respectively after operation, 19 died with recurrence of the tumor—average duration 10½ months, 9 died from other causes, without recurrence, 7 are still living and have no recurrence of the disease. It must be added that in all the cases the clinical diagnosis was confirmed by microscopical examination, and all tumors not carcinomatous are excluded in the above statistics.—*Medical Chronicle*, September, 1889.

Treatment of Warts.—ALTSCHUL recommends the treatment of warts by Unna's method, namely, mercurial ointment, containing five to ten per cent. arsenic. The ointment is spread on linen, and applied over the wart, which gradually softens, and is finally absorbed without leaving any mark. The method is painless. The treatment of warts by arsenical paste is by no means a new one, and its efficacy has been frequently confirmed.—*British Medical Journal*, September 14, 1889.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, SEPTEMBER 28, 1889.

ANTIPYRIN IN DIABETES.

SOMETHING more than two years have elapsed since D. GONNER called attention in the *Correspondenzblatt für Schweize Aerzte*, No. 19, 1887, to antipyrin as a remedy for diabetes. Since then it has received numerous trials, especially at the hands of the French school of physicians, including Huchard, Robin, Dujardin-Beaumetz, Germain Sée, Panas, and others. If the experience of these observers be received, it must be said of antipyrin that, excepting opium, it is the only drug to which a direct and efficient controlling power over glycosuria can be ascribed.

Although the precise position of this remedy in the treatment of diabetes cannot be said to be determined, a number of valuable practical facts may be deduced from the experience of the French physicians, as follows: *First.* It is the milder forms of the disease in which it has been found most efficient. *Second.* It is administered either alone or in combination with sodium bicarbonate, the latter being preferred by Robin. Fifteen grains of antipyrin, combined with twice as much of the alkali, are given four times a day, an hour before or after meals, and this is kept up for from eight to twelve days. Then the treatment is suspended, in order to avoid albuminuria and other toxic effects which excessive administration of antipyrin may produce. This period of intermission is continued until the sugar again returns or increases, say for a week. While the patient is taking the antipyrin a moderate amount of starchy food, even potatoes and bread, it is said, may be taken, to be discontinued again during the intermission, and thus the craving for these foods is supplied. The antipyrin alone is used in the same manner. In the hands of PANAS (*Le Progrès Médical*, April 13, 1889) so small a quantity as forty-five grains caused the entire disappearance of sugar in one case, although it immediately returned when the dose was diminished or the administration ceased. A *third* fact generally acknowledged by those who have had experience with antipyrin is, that it is in no sense a cure for diabetes; simply averting, during its use, the miscarriage of an important variety of food, the hydrocarbons, and thus conserving the energies of the patient. *Finally*, antipyrin should be cautiously used in cases of nephritis, on account of its well-known tendency in large doses to produce albuminuria, although its use should not be altogether interdicted on this account. Whenever, however, in non-albuminuric cases, albumin appears in the urine, it should be discontinued, as it should also so soon as it is found to produce no effect upon the sugar. It is of doubtful efficacy, also, where tuberculosis has occurred in the course of the diabetes, and where, although it diminishes the sugar, the specific gravity of the urine, nevertheless, increases; also in cases where the sugar exceeds three or five ounces per quart. It is to be stated, also, that good effects of antipyrin obtain in the polyuria of diabetes insipidus, as originally announced by Huchard in *Revue gén. de Clinique et de Thérapeutique*, No. 7, 1888.

How does antipyrin act in influencing the glycosuria of diabetes? Very probably through some influence on the medulla oblongata, as suggested by Huchard, who was led to its use in diabetes mellitus by a consideration of its marked effect on other diseases of bulbar origin, as, for example, Graves's disease, its effect as an anodyne, and its effect also observed of converting a diabetes mellitus into a diabetes insipidus. In a word, it must act similarly to opium, and if it produces its effects without the disadvantages of opium, it must prove a valuable acquisition to our armamentaria against diabetes.

THE TREATMENT OF POST-PARTUM HEMORRHAGE.

PROBABLY no subject in obstetrics gave greater scope to the dramatic powers of lecturers on this branch of medicine fifty years ago than post-partum hemorrhage, and the graduate went to the parturient

prepared to "turn out the clots" and grapple with appalling exsanguination.

Increased knowledge of the causes of such hemorrhage and of the physiology of labor, with general improvement in methods and appliances for the conduct of labor, have diminished the frequency and mortality of this complication, and in well-appointed maternities and in the hands of intelligent practitioners death from this cause is rare.

The most frequent cause of bleeding after delivery is failure of the uterus to contract; Credé's method of expressing the placenta, the frequent use of the hot douche, of uterine massage, and ergot generally induce uterine contraction promptly and efficiently. There remain, however, cases in which an abnormality in the contraction of the uterine muscle results in failure to close the uterine sinuses; the means usually employed fail, and a prompt and radical procedure is demanded. An application directly to the interior of the uterus is usually sufficient in these cases. Such may be a hot intra-uterine douche of antiseptic fluid; the injection of vinegar; a bit of ice carried within the uterus, or reflex stimulation of the uterine muscle by the antisepticized hand carried to the fundus.

A more reliable procedure than these, and a permanent check to bleeding, is the use of iodoform gauze as a uterine tampon. BORN and ECKERLEIN (*Centralblatt für Gynäkologie*, Nos. 25 and 26, 1889) report the most prompt and satisfactory results from this treatment. A strip of gauze four inches wide and two or three feet long is carried by the finger or a simple uterine applicator notched like an arrow, to the fundus; usually the presence of a single strip suffices, and the remainder is used to tampon the vagina moderately. Should more than a single length of gauze be easily admitted, the uterine cavity is moderately distended, and an additional strip is used for the vagina. In the absence of iodoform gauze any antiseptic material of similar dimensions may be employed. Such tampons may remain twenty-four or thirty-six hours in position, and may be renewed, with antiseptic douches, whenever required. Arterial bleeding from extensive laceration of the cervix may be promptly checked in this manner.

The value of the iodoform gauze tampon in bleeding from low attachment of the placenta has been clearly shown, and the treatment by this means is an established procedure. There is every reason to urge a similar adoption of the same efficient agent in treating post-partum hemorrhage.

BIOLOGICAL AND CHEMICAL EXAMINATION OF WATER.

WHILE chemical analysis alone is sufficient for accurately determining the quality of water used for most purposes, and is in fact the only method for such determination, its results are not sufficiently comprehensive to enable us to judge positively of the purity of water for dietetic use. Minute living organisms, the pathogenic and saprophytic bacteria, which enter as a factor of supreme importance in deciding the quality of a water from a hygienic standpoint, elude detection by the most delicate processes of chemical investigation. Their presence may be suspected from the determination of impurities derived from sewage, or some other source of pollution, but no reliable judgment can be formed without the aid of bacteriology. On the other hand, the bacterioscopic examination, employed alone, affords important but only partial results. Chemically pure water may contain a large quantity of bacteria, and almost perfect freedom from the latter is not inconsistent with the presence of waste organic matter. In order, therefore, to form a more exact opinion as to the purity of any given sample of water, both the biological and chemical methods of examination should be employed.

Injury to health attributable to impure water is for the most part connected in some way with the presence of microörganisms, and hence the study of the infections is of great moment. Among the infectious diseases which may arise through the use of impure water, Gärtner classes the affections due to the filaria, distoma, amœbæ, etc., but more particularly the diseases caused by bacteria. These disease germs are capable of living for a time in water, and through this medium of infecting the human body.

It is a well-known fact that most natural waters contain some bacteria. They are very abundant in river-water, less so in lake-water, still less in well-water, and least of all in spring-water. Most of these forms are perhaps not positively injurious, but their presence in greater or less quantity may be taken, with some reservation, as a gauge of the relative degree of pollution. The mere number of microörganisms, however, has no necessary or invariable connection with the wholesomeness of a water or the reverse; it is rather the quality or kind of microörganisms that determines this question. Pollution may be derived from such a source as may admit of the possible impregnation of the water with pathogenic germs; such, for example, as

those of typhoid fever. The specific organism may elude detection, but the presence of bacteria in excessive quantity is a sufficiently suspicious circumstance to warrant a sanitary survey of the source of the water and its mode of storage.

While the cultivation test as applied to water analysis has not been practically as successful in isolating pathogenic germs as could be desired, it must be remembered that this mode of investigation is yet in its developmental stage, and that we are gaining knowledge every day. The prospective usefulness of this method of investigation depends on the ability of biologists to distinguish between pathogenic and harmless organisms.

The certain exclusion of all infectious material is the chief object to be attained in establishing the wholesome quality of a water. Now, as many forms of infectious matter are as yet unknown; others exhibit little or no distinguishing peculiarities of growth on the gelatine plate; and as others again, like the typhoid bacillus, present so little that is characteristic that they cannot be distinguished with facility, it would seem that the bacteriological examination, which, for the most part, brings to light only harmless saprophytes, is of little practical value. It must be observed, however, that the filtration process is the only practical means of removing infectious matter from water, and that bacteriological examination is the only means of testing the efficiency of this process. Although we may fail to detect the pathogenic bacteria in drinking-water, we are justified in assuming that a process of filtration which excludes all other forms of bacteria, offers a barrier to the pathogenic forms. Until the method of examination by the culture process was discovered, there was, as Frankland remarks, no available means by which the relative efficiency for the removal of microörganisms of different filtering materials could be estimated, on a quantitative basis. This test is now recognized as being of great practical value, and has been satisfactorily applied in a number of European cities which resort to the plan of purification by filtration as the best means of removing organic impurity.

A good illustration of the importance of the combination of the biological and chemical methods of water examination is presented in the report of the investigation of the water supply of Minneapolis, embodied in the *Transactions of the Board of Health* of that city for the year ending March, 1888, which was conducted independently by Dr. Prudden and Prof. Leeds, with the object of determining the cause of the epidemic of gastro-intestinal disease which prevailed in that city in the winter of 1887 and 1888. Each method of analysis presented important but only partial results, but when combined they supplemented each other's deficiencies, and showed the cause of the disease to be in all probability in the water, which was grossly polluted with sewage and swarming with microörganisms, a teaspoonful of this water being estimated to contain, on an average, 30,000 living bacteria. Dr. Prudden succeeded in isolating, from the contents of the intestines of a fatal case, bacteria which do not belong in the intestinal canal, and which are capable of producing acute gastro-enteritis, with or without fatal results, in rabbits. This fact, studied with others developed by the investigation, points strongly to impure water as the probable origin of the epidemic.

The biological test affords us the possibility of detecting the specific agents of infection, but this result is as yet comparatively restricted. Its special value at present is based upon the fact that the pathogenic bacteria belong to the class of microorganisms which are recognizable, and, as Welch remarks, from the behavior of these forms conclusions may be drawn with regard to the behavior of those of pathogenic origin.

AT a meeting of the Executive Committee of the Congress of American Physicians and Surgeons held in Philadelphia last Saturday, Dr. S. Weir Mitchell was elected President of the next Congress, which will be held in Washington in September, 1891, and Dr. W. H. Carmalt, of New Haven, was elected Secretary, Dr. J. S. Billings, of Washington, Treasurer, Dr. William Pepper, of Philadelphia, Chairman of the Executive Committee, and Dr. S. C. Busey, of Washington, Chairman of the Local Committee of Arrangements.

AT the late meeting of the American Gynecological Society, Dr. Robert P. Harris, of Philadelphia, was elected an Honorary Member of the Society.

AT the Annual Meeting of the American Pediatric Association, held last week, the following were elected officers for the ensuing year: *President*, J. Lewis Smith, of New York; *Vice Presidents*, Arthur V. Meigs, of Philadelphia, and F. Forchheimer, of Cincinnati; *Secretary*, W. D. Booker, of Baltimore; *Recorder*, W. P. Watson, of Jersey City; *Treasurer*,

Charles Warrington Earle, of Chicago; *Member of Council*, L. Emmet Holt, of New York.

THE corner-stone of the new building for the New York Academy of Medicine on West Forty-third Street will be laid next Wednesday, at 4 P.M. The order of exercises includes an invocation by Bishop Potter, an address by Dr. A. Jacobi, remarks by ex-President Cleveland, and the formal laying of the corner-stone by the President of the Academy. Dr. Alfred L. Loomis.

THE first general meeting of the Continental Anglo-American Society will be held at the Grand Hôtel, Paris, on Monday, September 30th. The first annual dinner will take place the same evening at the Grand Hotel. The Honorary Presidents of the Society include the following gentlemen: Sir Spencer Wells, Sir Joseph Lister, Dr. Richard Quain, Prof. Ball, Prof. Brown-Séquard, Dr. Ricord, Dr. J. S. Billings, Dr. Fordyce Barker, and Dr. Weir Mitchell.

THE annual meeting of the American Academy of Medicine will be held at Chicago, Ill., November 13th and 14th.

SCARCELY any heroism of modern times has called forth such universal admiration as the voluntary sacrifice of Father Damien. It is now stated that his follower and successor, Father Conrady, has been stricken with the dread disease.

THE Fifth International Veterinary Congress was held in Paris from the 5th to the 8th of September. Tuberculosis in animals was the principal subject for discussion.

BERLIN has an active Society of Railway Surgeons. At their last meeting, among the subjects discussed were: Practical tests for color-blindness; traumatic neuroses and railway-spine, and others.

REVIEWS.

DISEASES OF WOMEN: A MANUAL OF NON-SURGICAL GYNECOLOGY. By F. H. DAVENPORT, A.B., M.D., Assistant in Gynecology, Harvard Medical School, etc. 12mo., pp. 311. Philadelphia: Lea Brothers & Co., 1889.

THIS manual, its author states, is intended to instruct students in the principles and details of gynecological examinations and treatment, and to help the general practitioner in treating average cases of women's diseases. We believe that this intention has been fulfilled; the indiscriminate laparotomist and extirpator will find little to attract in the volume, but the general practitioner may well avail himself of its lucid and rational modes of treatment, while the student will not find elsewhere more practical instruction in those details of scientific gynecology which are so essential in diagnosis and treatment.

"Methods of examination" are treated and illustrated with most satisfactory fulness. In the treatment of disordered menstruation, the author's mode of using leeches is very efficient; the leech is grasped gently behind the neck by dressing forceps, and held against the cervix, to which it rarely fails to adhere promptly. These valuable agents are neglected because of their inefficient application as generally practised. In fibrous stricture of the os internum, discission under antiseptic precautions is very properly preferred to divulsion, the latter being reserved for more elastic conditions of the tissues.

The chapter upon uterine displacements is especially full and satisfactory; the author is an intelligent and rational advocate of the use of pessaries, and gives an interesting exposition of his methods, including the safe and efficient, but not brilliant, treatment of displacements with adhesions by repeated vaginal tamponade. Purging with salines is not with our author a specific cure for peritonitis, he is quite out of fashion in this, but believes from experience that morphia and quinine, with rest and external applications, limit this disease in the pelvis and result in recovery. The value of electricity in promoting ovulation, in curing ovarian and pelvic neuralgias and promoting absorption, is fully recognized, and will not be disputed.

A useful list of instruments necessary for gynecological practice is appended, and scattered through the book are various instrumental devices of practical value.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN PHYSICIANS.

Fourth Annual Meeting, held at Washington, D. C., September 18, 19, and 20, 1889.

WEDNESDAY, SEPTEMBER 18TH.—MORNING SESSION.

THE Association was called to order at 10 A. M.

THE PRESIDENT, DR. FRANCIS MINOT, of Boston, read an address on

THE PROGRESS OF MEDICINE DURING THE LAST FIFTY YEARS.

The immediate causes of the great advancement of medicine were the growth of physiology and pathology, including bacteriology, and the improvements in clinical and laboratory teaching of the present day, which have led to a better acquaintance with the nature and causes of disease, to a more rational and successful thereapeutics, and to the prevention by means of hygiene of a large number of diseases, including some of the most fatal. These means have been greatly aided by the progress of science in general, and by the conveniences of modern civilization which enable observers from different countries to assemble together for interchange of knowledge and experience. A large share of medical progress is also due

to the dissemination of knowledge by means of well-conducted journals which enable thousands of practitioners who cannot leave their homes to be constantly supplied with the most recent discoveries relating to pathology and the diagnosis and treatment of disease. The organization of this Association is peculiarly adapted to the progress of medical science, representing no one section of our country, but including practitioners from all parts of the United States and Canada, whose experience, knowledge, observation, and ability are brought together for comparison and for mutual instruction.

The President reported the deaths of the following members, Drs. H. D. Schmidt, of New Orleans; John C. Dalton, of New York (honorary member); Robert Palmer Howard, of Montreal, and Edward T. Bruen, of Philadelphia.

DR. C. F. FOLSOM, of Boston, then read a paper on

THE EARLY STAGE OF GENERAL PARALYSIS.

He reported a number of cases illustrating the early stage of the disease in which the motor disturbances were very slight, and might readily be overlooked and escape detection. The striking loss of muscular control or power, generally considered a part of the disease, was not found until a late period of the disease. The mental symptoms consist in impairment of a peculiar quality, often so slight as to be made out with difficulty.

The disease arises most commonly under prolonged strain, particularly when associated with unaccustomed excesses. At least two-thirds of the general paralytics have had syphilis, and the relation of the disease with syphilis is too frequent to be accidental. The disease is, however, not a stage of syphilis, and is not benefited by specific treatment. The prognosis is probably not so hopeless as it is generally considered to be.

The common early treatment is harmful. Foreign travel is injurious. The only hope of at least partial cure or marked amelioration is in entire mental and physical rest.

DR. ROBERT T. EDES, of Washington, reported the case of a man suffering now from pronounced general paralysis, in whom the first symptoms of the disease made their appearance some twenty years ago. If the anatomical view of general paralysis is accepted he did not consider it strange that mental symptoms might precede the motor, depending upon the seat of the lesions.

DR. S. WEIR MITCHELL, of Philadelphia, was sure that certain cases of general paralysis began most markedly with motor trouble, while others began most decisively with mental conditions. In regard to syphilis he agreed with the author, except that he had seen cases due to syphilitic disease in which cure followed specific treatment. He had also seen cure follow in a small number of cases where the treatment was begun in the early stages, but where the motor disturbances and the mental incapacity were sufficiently marked to render the diagnosis reasonably certain. In all of these cases there had been a total abandonment of all previous pursuits, with absolute mental and physical rest. He agreed with the author that foreign travel was often injurious.

DR. JAMES J. PUTNAM, of Boston, remarked that the fact that syphilis acts in this disease not by producing a direct lesion, but in an indirect manner, justifies us in looking for other causes of degeneration which might act in a similar manner. He asked if the reader had seen any cases in which chronic lead poisoning was the apparent cause of the general paralysis, and related a case in which the imperfect and slow speech, the imperfect handwriting, and the expression of apathy and indifference, suggested a diagnosis of general paralysis. In this case there was, however, a history of drinking of water contaminated with lead, and there were certain local symptoms indicating lead-poisoning.

DR. WILLIAM PEPPER, of Philadelphia, believed that he saw these cases from a different standpoint than that of Dr. Folsom; they came to him as cases of dyspepsia, lithæmic disturbance, and the like, and were under his care for some time before symptoms leading to recognition were developed—sometimes for years before the paretic symptoms appeared. He could not regard syphilis as in any way essential in the causation of general paralysis.

In regard to the early stage of the disease, there was one symptom mentioned by Dr. Folsom, or described by others, as indicating the early stage, which he did not often find in cases of nervous lithæmia. There may be a grouping of these symptoms or a delicacy on the part of the diagnostician which will enable a finer and finer shade of these differences to be recognized, which does constitute a basis of diagnosis.

He thought that general paralysis could be initiated by many disturbing, depressing, or irritating causes, and that in its early stages and slight degrees it was capable not rarely of being entirely cured. If these cases are permitted to go on with neglect of hygiene, and with excesses, sexual, alcoholic, or business, a notable proportion will end with symptoms of general paralysis.

DR. FOLSOM said in regard to lead, that while he had seen cases in which this agent had produced symptoms similar to the initial symptoms of general paralysis, he had not seen a case in which the terminal symptoms of general paralysis had been produced. As illustrating apparent cure after specific treatment, he referred to a case in which the use of large doses of iodide of potassium apparently produced complete recovery, and the patient returned to his previous business. The symptoms after several months reappeared, and have continued steadily to progress. Whether this is the result in all such cases he was unable to say.

DR. JAMES STEWART, of Montreal, then read a paper on

TETANY.

The details of the following case were referred to: The patient, a male, aged forty, has been troubled during the past eight years with regularly recurring attacks of tetany. He served as a soldier during the American civil war. Suffered at that time and subsequently from chronic dysentery and malarial attacks. For upwards of ten years he has been troubled with diarrhœa. Patient is tall, emaciated, and anæmic. The first subjective symptom of his tetany is usually double vision, which is quickly followed by the characteristic contractions of the flexor muscles of the hands. Occasionally the flexors of the forearms and adductors of the arms become spastic, muscles of the face almost constantly suffer, muscles of the lower extremities rarely. The affected muscles are the seat during the attacks of fibrillary twitching. The attacks often last several days (seven to twelve), unless terminated by the very free use of morphia.

The galvanic irritability of the nerves is found to be greatly increased, also the mechanical irritability of both nerve and muscle. Knee-jerks exaggerated during attack, absent in intervals. Œdema of the hands and arms, with herpetic eruptions frequently to be seen after particularly severe attacks. The quantity of urine excreted during attacks is usually normal in amount, and contains urea and indican in great excess. Patient has been under observation for more than three years, and it has been noticed during the past two years that he has been getting gradually dull and apathetic. It takes him a long time to answer questions; he complains of general numbness, his face and lips are swollen; symptoms closely resembling those seen in myxœdema.

Tetany, he said, may be divided into three varieties: 1. Epidemic or "rheumatic" tetany, common in Europe, but extremely rare in America. The course is acute and favorable. 2. Tetany from exhausting causes, as lactation, diarrhœa, etc. Course is chronic and favorable. 3. Tetany from removal of the thyroid glands. Course generally is usually either quickly fatal or chronic and incurable. 4. A form of tetany occurring in cases of dilatation of the stomach. Very fatal. Infantile tetany is excluded from this division, as what is so frequently called tetany in infants is not that disease. No doubt, true tetany may occur in childhood.

Experimental Tetany.—When the thyroid gland is removed from cats, dogs, or monkeys, a condition very similar to the typical tetany of the human subject is observed, viz., fibrillary tremors and intermittent spasmodic contractions. Death usually follows in a week, and no changes can be found to account adequately for it.

The fact that there is a great increase in the electric irritability of the nerves after the removal of the thyroid glands is strong evidence of the similarity of the tetany of man and animals. Of the many forms of muscular contractions seen in man, in none, with perhaps the exception of cholera, do we find any marked increase of the electric irritability of the nerves and muscles.

No pathological changes that in any way can be considered characteristic have been described. All recent observers tend to confirm the conclusion of Schiff, that the tetany following removal of the thyroid gland is directly due to the loss of the gland, and that the thyroid gland in some way has a direct influence over the nutrition of the nervous system. It is difficult to explain how causes so diverse in their operation, as "rheumatic" influences, diarrhœa, pregnancy, lactation, and removal of the thyroid, can induce similar symptoms. It appears probable that impoverishment of the nerve centres is one of the main factors in its production.

DR. JOHN T. CARPENTER, of Pottsville, Pa., then read a paper on

TETANY, AND A NEW THEORY OF ITS PATHOLOGY.

He defined tetany as a nervous disorder, accompanied by tetanic spasm of an intermittent character, which may extend from the extremities to the jaw, and be reproduced during the periods of intermission at will, by pressure on the track of the affected nerve-trunk or over the blood-vessel obstructing the circulation. A historical *résumé* of the disease was given; tetany was regarded not as a special disease, but as a sequel of precedent phenomena only. The affection was regarded as the result of septic absorption. The diminution of cases of tetany coincident with the successful treatment and the prevention of septic poisoning was regarded as an argument in favor of the connection between septicæmia and tetany. Cases illustrating this view were cited. The views previously held in regard to the pathology of tetany were discussed and considered untenable.

DR. FRANCIS P. KINNICUTT, of New York, had seen but two cases of intermittent tetany, both occurring in patients with dilatation of the stomach. In one the dilatation was due to pyloric stricture resulting from cancer. In the other there was non-malignant stricture. In both of these cases the conditions were favorable for absorption of poisonous matter.

DR. F. T. MILES, of Baltimore, reported the case of a woman, aged twenty-two years. She had suffered for six to eight years, from dilatation of the stomach. She had vomited acid matter, but never offensive. She several times had numbness of fingers and toes. She suffered from her first attack of tetany twenty-four hours before her death. In this case the stomach had never been washed out.

DR. A. JACOBI, of New York, had been struck with the stress laid by the readers upon sepsis as the cause of tetany. In one of the cases reported by Dr. Stewart, which he thought was due to absorption of putrid material, the stomach was twisted, and Dr. Jacobi suggested that the intermittent contracture was due to nervous influences resulting from the twisting rather than to absorption. He did not doubt that there were cases in which septic absorption produced such symptoms; but when we recall the fact that the contracture is temporary, we must conclude that the influences giving rise to that attack were also temporary. Many of these cases are, he thought, the result of nervous irritation. In some of the cases reported, he should attribute the condition to anæmia.

DR. JAMES J. PUTNAM, of Boston, remarked that the reported cases of tetany showed such a variety of infectious sources that it seemed hardly probable that they should act in such a similar manner, unless there was something else behind. Two or three things are to be considered: first, the influence of habit. The disease set up by a variety of causes may continue as a result of habit. Secondly, the suggestion that in such cases of disordered action we have to deal with an over-sensitiveness of physiological arrangement is important. In these conditions we have the disordered manifestation of what is really a function, but one which ordinarily we do not recognize, as it has no independent existence. It would seem that in the absence of further knowledge with regard to infection and the manner this infection, arising from various sources, may act, we should insist upon the possibilities of explanation which are presented to us by what we know of the physiology and disordered physiology of the nervous system, in attempting to explain conditions met with in this and similar diseases.

DR. STEWART said, in connection with the influence of peripheral irritation, that in the cases of the dilatation of the stomach where tetany had caused death, the symptoms came on a few minutes after the stomach had been washed out. This would point to irritation rather than decomposition as the active cause in this class of cases. There are many other cases in which infection could not enter.

DR. CARPENTER said, in regard to anæmia as the

cause of tetany, that we should have to go back of the anæmia to the cause that produced it. He knew of no cause that would produce anæmia so surely as septic absorption.

AFTERNOON SESSION.

DR. A. BRAYTON BALL, of New York, read a paper on

THROMBOSIS OF CEREBRAL SINUSES AND VEINS.

He first referred to the influence of the following factors in the production of thrombosis: 1, blood stasis; 2, vessel lesions; and 3, blood changes. The anatomical conditions in the sinuses that best favor thrombosis were described at length. A number of cases of marantic thrombosis of cerebral veins and sinuses in chlorotic girls were reported.

The symptoms were next considered. Much importance has been attached to distention of external veins collateral to the internal veins supposed to be affected, giving rise to hemorrhage and œdema. These signs are frequently absent, and may be due to other conditions. The mobility of the symptoms has been considered of value. In these cases the cerebral symptoms undergo strange alternations not seen usually in other affections. Active delirium is exceptional. The depression continues, but alternates with a certain amount of improvement. Fever is absent at first; and, if present, is to be attributed to complicating conditions. Paralytic symptoms of varying extent are usually present. With the exception of the variation in degree, the paralysis does not differ from paralysis from other causes.

DR. WILLIAM OSLER, of Baltimore, exhibited two specimens illustrating the conditions described by Dr. Ball. The first specimen was one of extensive thrombosis of the lateral sinus, occurring in a man who died from phlegmonous erysipelas of the cheek. There were no special symptoms in that case. The second specimen was from a woman dying of consumption. It was thought that gradually increasing coma and the onset of cerebral symptoms were supposed to be due to basilar meningitis.

DR. A. JACOBI enumerated certain additional aiding causes. The first was a disproportion between the white and red blood-corpuscles. The second cause was the relative absence of muscular tissue in a number of the veins. A third cause was absence of water in the blood, often due to the withholding of sufficient fluid in the diet of patients. The last cause referred to was weakness of the heart. When, in exhaustive diseases, the heart is allowed to become feeble, thrombosis, with all its bad results, must be expected. It is certainly a good therapeutic measure to stimulate and strengthen the heart in every disease that will last long or tends to terminate in exhaustion.

DR. WM. H. WELCH, of Baltimore, said that there is one point of great force in explaining the production of thrombosis; that is, the possibility that there is some form of intoxication analogous to that produced experimentally by various substances, such as the fibrin ferment. Under such circumstances, there is almost instantaneously extensive thrombosis wherever the ferment reaches. Pathologists are aware of the frequency with which thrombi, usually of a mixed character, are found in the cerebral sinuses, particularly the superior longitudinal sinus, in cases that have presented no symptoms during life.

DR. SAMUEL C. BUSEY, of Washington, then read a paper on

THE EFFUSION OF CHYLE AND OF CHYLE-LIKE, MILKY, FATTY FLUIDS INTO SEROUS CAVITIES.

The reported cases of effusion of chyle and milk-like fluids into the pleural and peritoneal cavities, including the doubtful cases, do not exceed 43, and these cases cover a period of one hundred and ninety years. Nevertheless 23 of the cases of effusion of chyle and chyle-like fluid into the abdominal cavity have been observed during the present century, 15 since 1850, and 13 during the last and present decades. The increasing frequency of the occurrence is thus clearly shown.

Effusion into the pleural cavities; chylothorax. Of this, including the doubtful cases, there have been 10 cases reported. In 5 of these the chyle poured directly from the thoracic duct. The diagnosis in these cases can only be made by evacuation and examination of the fluid. The prominent symptoms are dyspnœa and accumulation of fluid in one or both cavities. The prognosis is unfavorable and the treatment expectant.

Effusion into the tunica vaginalis testis. The case of galactocele reported by Vidal (de Cassis) seems to have been the first observation of this class of effusions. In two of the reported cases the patulous orifices of the vessels from which the lymph exuded were found. Since 1885 there have been reported in this country 13 cases in which filaria were found, and 2 of these were cases of lymphocele. It has not been shown, however, that filaria are present in every case of lymphocele. It is conceivable that adenitis, gonorrhœal lymphangitis, or other conditions which obliterate the permeability of neighboring and connecting glands, might cause stasis of lymph and dilatation and rupture of lymph capillaries and plexuses with which the serous membranes are so richly supplied. The opinion of those who have had the best opportunity to study the relation of filaria to disease in general, seems to be that of Sir Joseph Fayrer, that it has been shown that disorders of the lymphatic system are most frequently associated with, if not caused by, the filaria. The recent invaded portions of the subtropical belt of this country by the filaria, and the reports of cases of disease with which the parasite has been so uniformly associated, together with the fact that the mosquito has been proven to be its intermediate host, present considerations of the highest importance to the profession and general public. Some of the cases have been cured by injection of iodine, others have been cured by dissecting back the vessels and tying the bundle *en masse* with a silk ligature.

Chylous and oily ascites. A tabulated statement, arranged chronologically, presenting a condensed summary of the reports of cases of chylous and oily ascites, was given. The number of cases reported was 33. Primary rupture occurred in but 5 cases. Chylous ascites may be the secondary result of a variety of morbid conditions, which directly or remotely obstruct the flow of the chyle through the lacteals, receptaculum, or thoracic duct, impede its exit into the left subclavian vein, or retard the current of blood in the left subclavian vein, right side of the heart, or lesser circulation. The relation of puerperal conditions to the effusion of chyle,

is not susceptible of explanation. In five cases the fluid found in the peritoneal cavity was associated with tuberculosis, and in four it is stated that the peritoneum was more or less studded with tubercle. No perforation or rupture of chyle-conveying vessels was found in any of these cases.

The symptomatology of effusion of chyle into the peritoneal cavity is not sufficiently distinctive to differentiate such cases from ordinary ascites, and a diagnosis is only possible after examination of the evacuated fluid. Of the 33 cases, 19 died, 9 recovered; and in 5 the result is not stated. Of the 22 cases of chylous ascites proper, 12 died, 5 recovered; and in 5 the result is not stated. Meagre and unsatisfactory as are the clinical details of these cases, they point to two conclusions: 1, that a free and unobstructed channel of communication between the venous system and the chyle-conveying vessels is essential to the proper nutrition of the body and preservation of life; 2, that death following partial or complete obliteration of this communication is the result of inanition.

In 17 of the 33 tabulated cases, tapping was practised, and in most of the cases repeated several times. Six of these recovered. In 2 laparotomy was resorted to, with recovery of both patients. One was a case of intact retention cyst, and the other was probably a ruptured cyst. As a medical resource, paracentesis is of questionable value. The treatment is mainly directed to the prolongation of life. The causative condition may in some cases be amenable to medicinal treatment, but in most cases some surgical procedure might offer a prospect of cure. In filarial cases, the treatment applicable to such would be admissible. Sonsina thinks that astringents, such as gallic acid and tincture of the chloride of iron, with rest, tonics, and proper alimentation, are useful. Lancereaux thinks that the parasitic forms of lymphatic disease are curable. He has found mercurial inunction in the region of the affected gland in connection with hydropathy of service. He suggests the injection of a parasiticide into the affected glands for the purpose of destroying the female adult worm,

DR. OSLER said that in ordinary post-mortem work it was not infrequent to meet with varices of the chyle vessels of the mesentery covering the walls of the intestine. Sometimes there are extravasations which may form large chylous cysts.

With reference to chyluria, he was positive that there was a non-parasitic form. He had made thorough examinations in one such case and failed to find filaria. On post-mortem examination, nothing was discovered. Also in a case of lymph scrotum, he had examined the fluid and the blood and had found no embryo. He laid a great deal of stress upon these cases, as it is generally stated that these conditions are always parasitic.

DR. WELCH exhibited a specimen of chyle removed from the abdominal cavity of a boy, twelve years of age. He described the chemical and microscopical characters of the fluid, and dwelt upon the importance of distinguishing between chylous and fatty hydrops.

DR. J. F. A. ADAMS, of Pittsfield, Mass., then spoke of the

SUBSTITUTES FOR OPIUM IN CHRONIC DISEASES.

The disadvantages attending the use of opium are: 1. In an overdose it is a poison 2. In ordinary doses its benefits are largely offset by various functional derangements. Its use involves the danger of the opium-habit.

Of remedies that may be substituted for opium for the relief of pain, the antipyretics—antipyrine, acetanilide, phenacetine, and exalgine—have well-grounded claims to be regarded as rivals of opium. They are, however, less certain and less prompt, particularly when pain is very violent. Antipyrine in five- to ten grain doses has been found valuable as an analgesic, particularly in headache, neuralgia, and rheumatism.

Acetanilide he had found less active than antipyrine. He used it in doses of seven or eight grains. He had found it particularly serviceable in lumbago and dysmenorrhœa. In the latter condition, one or two doses have afforded prompt relief.

Salicylic acid and its sodium salt should be included on account of their marked effect in the relief of pain in rheumatism, particularly its acute form.

Substitutes for opium to induce sleep. Paraldehyde is an excellent hypnotic, although rather uncertain. Hydrate of amyl is generally preferable to paraldehyde, being more reliable as well as more agreeable. Sulphonal is more extensively employed than either of the above, and is applicable to all forms of insomnia.

Chronic diarrhœa. It is probable that no remedy has been used in this affection so largely as opium. The effects of this mode of treatment have been far from satisfactory. Recently the author had treated these cases antiseptically with far better results. The remedy chiefly used has been sodium salicylate in five- to ten-grain doses, three or four times a day. He had also used salol with success.

We now have remedies which may be used in place of opium in all chronic affections where formerly this remedy was our chief reliance. For producing sleep and for the treatment of chronic diarrhœa, we have certain hypnotics and antiseptics which are not only as efficient, but so much more satisfactory that we may practically lay aside opium, to be used only on rare occasions. As an analgesic, opium still stands at the head of the list for promptness and certainty, but the antipyretics mentioned are probably capable of replacing it in the majority of chronic cases, and the relief afforded by these remedies is attended with less disturbance of the system than that induced by opium.

DR. G. M. GARLAND, of Boston, referred to the value of the fluid extract of gelsemium as a substitute for opium. In frontal headache it has an admirable effect. It is used also with advantage in difficult and painful menstruation, and in certain forms of neuralgia. As a simple hypnotic, gelsemium answers well in cases of temporary congestion with insomnia and headache. In hysterical conditions this agent will often induce sleep in a short time. The drug is given in doses of five to ten drops every half hour until the desired effect is obtained, or its physiological effect is produced in diplopia and ptosis. These appear sufficiently early to serve as a warning.

DR. I. T. DANA, of Portland, reported two cases of opium-habit occurring in a man and wife. The husband was a young man who had for some time given hypodermic injections of morphia to a patient dying of cancer. He subsequently broke his leg, and remembering the effect of the injections in the case of cancer, he tried them on himself. The result was so exhilarating, and as he "could not see why his wife should not have a little

of the fun," he began giving her the injections, although she was perfectly healthy. In this way the habit was induced, and when admitted to the hospital each one was taking six grains of morphia daily.

DR. D. W. PRENTISS, of Washington, exhibited

A REMARKABLE CASE OF SLOW PULSE, EXTENDING OVER A PERIOD OF NEARLY TWO YEARS.

G. W. P., white, male, carpenter, aged fifty-four years. Has always been healthy. The only illness he remembers is neuralgia of stomach, fourteen years ago. The only injury he ever received was a fall, a distance of fifteen feet and striking on his feet, when nineteen years old. Ten years ago a brick fell upon his head, cutting the scalp, but causing no serious injury. Never had any form of venereal disease. Always temperate in the use of alcohol, but not in the use of tobacco. He has been under the observation of the writer for sixteen years, but had never been attended professionally until present illness.

December 13, 1887, after working some time in a malarial locality, he began to have "weak spells," and several times fainted on lifting heavy weights. Examination showed no well-defined disease. No fever, mind clear, pulse 36. Urine normal. No organic disease of heart discovered. The systole was full and strong; diastole greatly prolonged. Between December 13, 1887, and January 20, 1888, the pulse ranged from 22 to 76. During this time there were frequent attacks of syncope. During one fainting attack he fell down stairs. At another time fell out of a chair, remaining unconscious about a minute. After January 20th, when pulse had reached 76, he had no more fainting spells. In March he resumed work. October 2, 1888, he had a relapse, with the same symptoms as in previous attacks. From this date to April 15, 1889, the pulse ranged from 15 to 44 per minute. The fainting attacks continued throughout this time, occasionally very severe. He improved to a certain extent, but about August 1, 1889, he began to have a return of the old symptoms. During the fainting spells the pulse fell to 12 or 15. Between August 5th and September 18th the pulse ranged between 12 and 88 per minute, and between August 10th and August 15th it did not rise above 14 per minute.

The temperature during this time was between 94.5° and 97°. The patient improved somewhat after August 15th, and September 18th was well enough to present himself for examination before the Association.

The "spells" referred to were described. They come on without warning, often without apparent cause, sometimes after exhaustion. He faints, losing consciousness. They last from a few seconds to half an hour. Breathing gasping and slow. Face and hands first pale, then dark and purplish. There is no pain. He has great confidence in the bromide of ammonium, which he thinks controls the attacks. The treatment of the case from the first has been rest in bed, tonics, stimulants, electricity, and bromide of ammonium, together with supporting diet. The tonics used, strychnine, quinine, and iron, with belladonna. Digitalis was tried, but made him worse. Nitroglycerine seemed to help for five doses, but later caused distress. Convallaria and strophanthus were tried, with like result. The drug which appeared to give the most relief was bromide of ammonium, given in doses of one gramme (fifteen grains) three times a day, and extra doses when paroxysms threatened.

The most interesting question in this case turns upon the pathology. What is the cause of the retarded action of the heart? The causes which may produce slow pulse may be classified as follows:

1. Disease or injury to the nerve centres, producing either irritation of the pneumogastric or paralysis of the sympathetic (accelerator) nerve of the heart.
2. Disease or injury of the pneumogastric nerve increasing its irritability.
3. Disease or injury of the sympathetic nerve of the heart, paralyzing it.
4. Disease of the cardiac ganglia, by which the influence of the pneumogastric preponderates.
5. Diseases of the heart muscle (degeneration) whereby it fails to respond to the normal stimulus.
6. Action of poisons as of lead or tobacco either on nerve endings or on nerve centres.

In this case it is difficult to say to which of these divisions it belongs. There are no symptoms to indicate any form of disease of the nerve centres. There is no evidence of disease of the nerves themselves, nor has any organic disease of the heart been discovered. There is left only the action of certain poisons and the question arises whether or not in some obscure way the conditions may not be due to tobacco poisoning from excessive smoking. Another possibility is malarial poisoning. The attacks first appeared while he was working in a malarial district and in the summer of 1888, he had intermittent fever. These considerations make it probable that there is paralysis of the accelerator nerves and not an irritation of the vagus. The symptoms are due solely to defective circulation.

In many of the cases collected in connection with this report, the pathological appearances were a result of the slow pulse rather than a cause.

Abstracts were given of 55 cases of slow pulse of which the following is a brief analysis as to causes: fracture or dislocation of cervical vertebra, 9 cases; disease of brain, 9 cases; cerebral syphilis, 2 cases; sunstroke, 1 case; ossification of aortic valve and coronary arteries, 2 cases; starvation, exhaustion, loss of rest, convalescence, 3 cases; epilepsy and epileptoid disease, 9 cases; heart disease, 6 cases; lead-poisoning, poisoning by salt fish, pernicious fever, 3 cases; nervous shock, cholera morbus, 2 cases, and not stated, 9 cases.

SEPTEMBER 19TH—MORNING SESSION.

DR. FREDERICK P. HENRY, of Philadelphia, opened a discussion on the

RELATION BETWEEN CHLOROSIS, SIMPLE ANÆMIA, AND PERNICIOUS ANÆMIA.

He said the subject might be treated under three heads:

1. Are they separate diseases?
2. Are they of kindred nature?
3. Are they different stages of one affection?

Pernicious anæmia was first considered, because the determination of its status is of fundamental importance. It is admitted by all that the clinical features of this disease are common to a number of affections, especially cancer and atrophy of gastric glands; but those who argue most forcibly in favor of its independent nature

exclude from the category of pernicious anæmia all cases in which an anatomical lesion of any organ is found. This appears to him unscientific, for an independent disease is one which rests upon a constant anatomical basis or is invariably produced by the same specific agent. Hunter has endeavored to establish pernicious anæmia as an independent disease by the demonstration of an excess of iron in the liver in cases of that affection. He regards this as the essential anatomical feature of pernicious anæmia. The work of Hunter is of great value, and certainly demonstrates the existence of an excessive hemolysis in that disease. In the speaker's opinion, however, this excessive hemolysis is a consequence of defective hemogenesis, for certain facts show the red corpuscles of pernicious anæmia to be abnormally weak and perishable. Chlorosis is universally admitted to be due to defective hemogenesis, and, therefore, he regards it and pernicious anæmia as closely related affections. Transitions from the one affection to the other have also been observed by himself and others.

His conclusions were: (1) That pernicious anæmia is a process, not a disease; (2) that it is closely related to chlorosis; (3) that it may be the terminal stage of other diseases, and especially of cancer of the stomach and atrophy of the gastric glands.

Leucocythemia and Hodgkin's disease, in that they are always associated with lesions of the blood-making organs—spleen, lymph-glands, bone-marrow, etc.—are independent diseases, or, rather, different stages of the same disease, for several cases are recorded in which an undoubted transition from one to the other has been observed.

DR. F. FORCHHEIMER, of Cincinnati, then spoke as co-referee on the same subject. He first referred to the confusion which existed in regard to the definition of the two diseases. Immermann states that we are justified in regarding anæmia as that condition in which there is a diminution of red corpuscles as well as the albumins of the plasma in the blood (hypalbuminosis). Strümpell considers that "the essential element in anæmia is, therefore, a diminution in the number of red corpuscles or so-called oligocythæmia," and states further, that oligocythæmia is not invariably accompanied by a diminution in the amount of serum-albumin (by which he means plasma-hypalbuminosis)." Going on it is found that anæmia or oligæmia vera really means a diminution of the whole quantity of the blood and that this condition can be divided into hydræmia, oligocythæmia, oligæmia sicca and oligæmia hypalbuminosa. We have three representative definitions: the one broad and general, including a diminution of any one or all of the constituents of the blood; a second, in which hypalbuminosis and oligocythæmia are the principal if not the only factors; and a third, which makes oligocythæmia alone the characteristic feature. From a purely practical standpoint the latter seems the best.

The same confusion in regard to definition is met with in a consideration of chlorosis. Duncan (1867) was, however, probably the first to make the distinctive feature, oligochromæmia characteristic for chlorosis—that is, in chlorosis we find the individual red corpuscle deficient in hæmoglobin. Unfortunately for this definition, the term chlorosis is to be looked upon as an essentially clinical one; it is not going too far to state that by far the great majority of reported cases of chlorosis are not chlorosis at all. Another difficulty is that both oligocythæmia and oligochromæmia may occur in the same individual, so that the term chloranæmia is justified by observation of existing conditions. It is more than probable that anæmia is a forerunner of chlorosis in a great many instances, and possibly a number of cases occur in which there is a combination of both conditions.

Almost every cause put down for anæmia will hold good for chlorosis. Sex, age, a peculiar composition of the blood, and certain vascular anomalies are held to be especially characteristic for chlorosis. The two latter are the only ones to be found in chlorosis. The process of sexual development is looked to as the time of most common occurrence of chlorosis. This age also produces a great number of cases of anæmia; but children and old people are subject to anæmia and practically excluded from chlorosis. The greater number of cases occur between the ages of fifteen and twenty-five years, decidedly after the time of first menstruation. Furthermore, an anæmic constitution is a strong predisposing cause for chlorosis.

The clinical characteristic of chlorosis lies in the peculiar changes in the blood. In anæmia the red corpuscles as well as the albumins of the plasma are reduced in quantity and frequently there is production of a greater number of smaller corpuscles (microcytes). As a result of the reduction of the number of red corpuscles the hæmoglobin is correspondingly reduced in quantity. In pure chlorosis the number of red corpuscles is not diminished and a tendency to the production of larger red corpuscles (megalocytes) is especially well marked. These changes are, however, not sufficiently characteristic to establish a diagnosis. It is also found that the amount of hæmoglobin in each corpuscle is diminished. It has been said that in anæmia there is always hypalbuminosis, while in chlorosis this is absent, but this has not yet been positively proven.

One respect in which chlorosis is said to differ materially, if not absolutely, from anæmia, consists in the pathological changes, first described by Virchow. These are narrowing of the lumen of the cortex and larger arteries as well as thinning of their walls. The heart is sometimes small, sometimes hypertrophied. This view would permit us to state that chlorosis is always congenital, in some cases latent for years, while anæmia in most cases is acquired. Many objections have been urged against this view.

The relation of the symptoms of anæmia to chlorosis depends upon the condition of the blood and the anatomical sub-strata. Given a case of anæmia in which there is only a reduction of hæmoglobin as a result of oligocythæmia and a case of chlorosis in which there is a reduction of hæmoglobin as a result of oligochromæmia, and metabolism in both these cases will be approximately the same; but if in anæmia we have oligocythæmia as well as hypalbuminosis, which is said to coëxist in the majority of cases, the metabolism must be different from that of a pure case of oligocythæmia. As a result of reduction of hæmoglobin there is simple reduction in the process of oxidation; at the same time the waste products are carried off and sufficient albuminous food is carried to the tissues by the plasma of the blood which is unchanged. Hypalbuminosis and obligocythæmia produce an entirely different result. We have

the same factor, suboxidation, but we have in addition deficiency of supply. In mild cases of anæmia, there is produced a loss of weight; in severe cases the condition called marasmus. In chlorosis very little, if any, loss of weight occurs; very frequently the opposite condition is brought about by too good supply and by the presence of too much CO_2, preventing decomposition of fats. When anæmia is associated with chlorosis, we have a very unfortunate combination, especially if there is a great amount of hypalbuminosis.

Unless we believe that the anatomical lesions of Virchow belong to chlorosis, there exists no difference between the symptoms of chlorosis and anæmia.

The therapeutic relations of the two diseases must be considered. While the indiscriminate use of iron in anæmia must be deprecated, yet, upon the whole, iron is just as much looked upon as a specific in anæmia as in chlorosis. Where, in anæmia, we try to remove the cause and institute causal treatment, we are satisfied in chlorosis in removing that symptom which is the essential of that disease. It has been repeatedly demonstrated that the removal of this essential symptom is followed temporarily by complete recovery. Whereas, in anæmia, treatment is followed by complete recovery or complete failure, iron in chlorosis will always result in amelioration, even if the tendency to relapse cannot be removed. There are few cases of chlorosis, even those with the lesions of Virchow, that are not benefited by the administration of iron in sufficient quantity. In a great many cases of anæmia, the use of iron will be followed by negative results.

DR. OSLER took issue with Dr. Henry in regard to chlorosis. He held that chlorosis is absolutely distinct from pernicious anæmia, and for the following reasons: 1. The sex. He had never seen chlorosis in the male. 2. The pathological conditions. He regarded the hyperplasia of the heart and great vessels as a specific anatomical distinction in a certain number of cases. 3. The character of the blood. He considered the diminution of the percentage of hæmaglobin a distinctive feature of chlorosis. 4. Curability. Although, in chlorosis, there is a tendency to relapse, each given attack can be cured, if sufficiently large doses of iron are employed.

DR. KINNICUTT agreed as to the lack of relation between chlorosis and pernicious anæmia. He had never seen true chlorosis in the male. All his cases of pernicious anæmia, on the other hand, with one or two exceptions, had occurred in males. He agreed with Dr. Henry in regard to the relation between Hodgkin's disease and true leucæmia. He related a case which came under his observation with typical symptoms of Hodgkin's disease. At this time the proportion of white corpuscles to red was normal. The spleen and liver gradually enlarged, and two years later, at the time of the patient's death, there was one white corpuscle to five or six red.

DR. W. W. JOHNSTON, of Washington, thought that a study of certain anæmias, which are met with in women, will throw light upon the association of anæmia with diseases of the intestinal glands and gastric tubules. The explanation of the chronic anæmias of parturition is probably the continued pressure upon the intestinal tube, causing a long starvation, lasting nearly a year. This seems to produce an actual organic change in the intestinal glands. Several illustrative cases were cited.

DR. PEPPER agreed with Dr. Osler in regard to the relation between true anæmia and chlorosis and progressive pernicious anæmia so-called. He was not prepared to admit the analogy between true chlorosis and progressive pernicious anæmia. The conditions of the blood are widely antagonistic in these two affections. The clinical differences are also very marked. In the present state of knowledge it is probably wiser to consider essential anæmia as an independent affection.

DR. HENRY thought that the definition of chlorosis, given by Dr. Osler, could not be maintained—that is, that there is always a diminution of hæmoglobin with a nearly normal number of red corpuscles. The arguments that he had advanced were based entirely upon personal observation. While if chlorosis is readily relieved by treatment in the early stages, yet, if it is neglected, the chlorosis may become more intense, and may present the appearances of pernicious anæmia.

DR. S. WEIR MITCHELL then spoke on the

SUBJECTIVE FALSE SENSATION OF COLD CONSIDERED AS A SYMPTOM.

He had met with many cases where a feeling of cold is complained of in members which do not present any objective changes in temperature. These may be placed in three classes: 1. Those due to a central cause. 2. Those due to neuritis. 3. Those whose origin is at present inexplicable, or due to hysteria. A number of cases exhibiting this symptom to an extreme degree were reported. In the first case, a marked sensation of cold, involving the left side of the body, followed an injury to the head. Three or four cases were referred to, coming in the second class. The sensation of cold involved the posterior part of the legs, the back, or buttocks. In all these cases there was either neuritis at the time, or it developed subsequently. When this symptom is noted neuritis may be expected. Two cases belonging to the third group were described. One was an elderly individual with no signs of hysteria; the other was a case of a young woman with marked hysterical symptoms.

DR. PUTNAM had frequently seen the coldness spoken of in chronic spinal disease and in neuritis; and described such a case in a man with chronic sensory neuritis.

DR. MILES regarded this sensation of coldness as a very impotent symptom of neuritis, and reported a case associated with acute neuritis of the ulnar nerves.

DR. G. M. GARLAND, of Boston, then read a paper on

GASTRIC NEURASTHENIA.

He first reviewed Leube's observation on dyspepsia nervosa, and presented a tabular statement of the gastric neuroses.

A case of anorexia nervosa occurring in a woman, sixty-three years of age, was reported. The woman was of feeble constitution. She digested her food without consciousness of the process, and her bodily functions were practically normal in every way except that she suffered from anorexia.

Three cases of vomitus nervosus were then reported:

Case I.—Miss S. began at the age of two years to have sudden attacks of vomiting. These occurred at irregular intervals until the time of her death. The attacks lasted twenty-four hours, and it required a week for the child to recover her strength. At the age of twenty, she began to have excessive muscular twitchings with the attacks. Two years later she began to have

severe headaches. These gradually merged into one steady ache. January 1, 1885, the author saw the patient suffering from intense headache and slight twitching of arms and legs. Vomiting appeared the next day, causing intense burning of the throat from the intensely acid character of the matters vomited. After four days she gradually improved and entirely recovered. November 12, 1884, the patient was again seized with headache. November 15th, vomiting and twitching began. She gradually improved until December 2d, when all the symptoms returned and continued until her death, December 13th. Urine was normal until a few days before death, when it contained a trace of albumin but no casts. At the autopsy no marked organic change was found in any part of the body.

Case II.—Miss. S., twenty-two years old, first seen September 19, 1888. She was in bed with headache, poor appetite, constipation, and weakness. Pulse, temperature, and urine normal. Some nausea. Vomiting appeared in a few days. She was fed exclusively by the rectum for three weeks, but the vomiting persisted, and there was severe burning along the entire œsophagus. At times the urine was scanty, but never contained albumin. She gradually improved, but is not as strong as before her illness.

Case III.—Miss D., æt. forty-three years, had been subject to bilious headaches. During the summer of 1888, she had a severe attack of vomiting, and she was very ill for several weeks. During the following September, as a result of anxiety, her appetite left her and the nausea returned. She, however, did not vomit.

The conclusions drawn from the above cases were: 1. All the women have been of dark complexion. 2. They have not been of the so-called hysterical temperament. 3. Feeding by the mouth was abandoned in every case, and rectal enemata were necessary. 4. None of the drugs usually potent in soothing a nauseated stomach were of any avail. Morphia subcutaneously was the only remedy that was of benefit. 5. The vomitus caused great discomfort along the throat, and in one case caused severe glossitis. In connection with the hyperacidity, he referred to certain cases of acid vomiting described by Rossbach, and designated nervose gastroxynosis. The acidity of these cases depends upon excessive secretion of hydrochloric acid, and is independent of the presence of food in the stomach.

DR. MITCHELL said that in all cases of neurasthenia where there are great complaints of gastric and intestinal difficulty, the presence of hypochondriacal conditions must constantly be considered. It is rarer for grave cases of neurasthenia to present themselves without some abdominal symptoms. In regard to anorexia nervosa, he thought that in the majority of cases a background of hysteria would be found. It is suspicious that this condition is never seen in men.

DR. PEPPER asked in what respects other than the invariable and extreme acidity of the matters vomited, these cases differ from those that have been described under the head of cyclic, acid, and recurrent vomiting. He had seen many such cases, and some like the fatal case reported. In some of the cases the vomited matters were extremely acid. He had had these matters examined chemically with the hope of finding some leucomaine, but so far with negative results. In regard to treatment, the only remedy that had been of benefit was antipyrine.

AFTERNOON SESSION.

DR. JOHN H. MUSSER, of Philadelphia, read a paper on

PRIMARY CANCER OF THE GALL-BLADDER AND DUCTS.

After describing two cases of this affection that had come under his observation, he reviewed the cases that had been reported, and presented the following conclusions: Primary cancer of the gall-bladder is not so rare as is generally believed. It occurs in the female nearly three times as often as in the male. A large number (57 per cent.) of the cases occur under the age of sixty. Gall-stones are an exciting cause, especially in persons predisposed to the affection. The organ is generally not much enlarged, save as the result of secondary processes. Metastasis is not widespread. By continuity of structure neighboring organs are involved. Adhesions to adjacent organs with ulceration and perforation are not uncommon. Pain, jaundice, and the presence of a tumor are the most common phenomena. With them are associated much cachexia, vomiting, constipation, diarrhœa, and ascites. Pain was present in 62 per cent. of the cases, at first ill-defined, then becoming localized to the right hypochondrium, and lancinating in character. Jaundice was present in 69 per cent., gradually increasing in degree. In some cases, however, it was intermittent. Tumor was noted in 63 per cent. The tumor was hard, firm, painful and generally movable with respiration. The progress of the disease is always continuous. Some extraordinary cases are reported in which there was temporary cessation in the progress of the disease. Death results from exhaustion; frequently from peritonitis; in some cases from metastasis to other organs; in some from biliary obstruction; in eight cases death was due to cholæmia. The duration of the disease is short, the average being six and two-thirds months. The progress is rapid after complete occlusion of the biliary passages or evidence of inflammation of the biliary passages has developed.

DR. HENRY F. FORMAD, of Philadelphia, read a paper on

THE ANATOMICAL AND PHYSIOLOGICAL RELATIONS OF LESIONS OF THE HEART AND KIDNEYS,

which was based upon the post-mortem study of 300 cases observed in public and private practice.

DR. P. G. ROBINSON, of St. Louis, then read a paper on

THE CONTAGIUM OF DIPHTHERIA.

Diphtheria, he said, is an acute infectious disease, doubtless due to a living organism (microbe) the exact identity of which cannot yet be regarded as settled. Primarily a local affection, the system becomes secondarily and generally infected through absorption of a poison generated at the primary and localized seat of inoculation. The modes of infection are numerous, the contagium being directly transferred by contact, in a dry state through the air for limited distances, in foul clothing, in polluted food and drink, milk probably being a prolific source of infection.

While, strictly speaking, diphtheria can hardly be called a filth-disease, since it prevails often to a very limited extent in those localities whose hygienic surroundings are apparently the worst, yet certain kinds of

filthy accumulations, as the manure of animals, notably the refuse from cowsheds and dairies, seems to furnish the most favorable conditions for the culture of this particular germ.

SEPTEMBER 20TH—EXECUTIVE SESSION.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President.—Samuel C. Busey, of Washington.

Vice-Presidents.—William Pepper, of Philadelphia, and Henry M. Lyman, of Chicago.

Recorder.—I. Minis Hays, of Philadelphia.

Secretary.—Henry Hun, of Albany.

Treasurer.—W. W. Johnston, of Washington.

Member of Council.—G. Baumgarten, of St. Louis.

Representative on Executive Committee of Congress of American Physicians and Surgeons.—William Pepper, of Philadelphia.

The following were

ELECTED TO MEMBERSHIP.

William G. Thompson, William H. Thomson, and J. West Roosevelt, of New York; Charles Carey and Charles G. Stockton, of Buffalo; Victor C. Vaughan and Heneage Gibbes, of Ann Arbor; Charles W. Purdy, of Chicago; Starling Loving, of Columbus, O.; W. H. Geddings, of Aiken, S. C.; William C. Dabney, of Charlottesville, Va.; B. F. Westbrook, of Brooklyn; and Henry P. Walcott, of Cambridge, Mass.

The date of the next meeting was directed to be fixed by the Council, between May 20 and June 15, 1890.

DR. JAMES J. PUTNAM, of Boston, then read

A SUPPLEMENTARY INQUIRY INTO THE FREQUENCY WITH WHICH LEAD IS FOUND IN THE URINE.

The paper embodied further researches as to the frequency with which traces of lead are found in the urine of persons in good health, or not presenting the classical symptoms of lead-poisoning; and discussed the propriety of enlarging our clinical conception of that disease. A table was shown in which the results of the present investigation were combined with those reported two years ago, which may be summarized as follows: The urines of 68 persons, either presenting no symptoms (healthy medical students), or only symptoms of specific or local disease (phthisis, pleurisy, local injuries, etc.), were found by Dr. A. M. Comey and Dr. C. P. Worcester to contain lead in the proportion of about 17 per cent.; while those of another group of 125 persons, presenting various symptoms of disease, such as it was thought might possibly be due in part to lead-poisoning, contained lead in the proportion of 50 per cent. The largest sub-group of this latter class embraced 36 cases, not strictly homogeneous, but made up of chronic or subchronic affections of the spinal cord and peripheral nerves. One (typical) fatal case of this sub-group was analyzed at some length, and the results of the microscopic examination of the spinal cord and nerves were reported upon. The case was that of a carriage-painter, who suffered for some years with progressive anæmia and general emaciation, and for the two years preceding his death with weakness, paræsthesia, and impairment of sensibility with exaggerated tendon reflexes and extensor spasm, increasing, finally, to complete paraplegia. Lead had been found in the urine three times, but the patient had never presented "a blue line, characteristic of paralysis, encephalopathic symptoms, or colic, though the bowels had been obstinately constipated for years. The morbid changes found after death, besides the signs of general anæmia, were those of combined antero-posterior and lateral sclerosis of the cord, on which, at the last, a subacute process of diffuse destructive softening had engrafted itself."

This latter process, which was characterized by the presence of a dense infiltration of granule-cells, and by a breaking down of the nerve tubes, so as to form round or oval cavities, such as have often been described, extended the length of the cord occupying the position of the sclerosed system tracts and the adjoining tissues. The nerve-roots were affected, though to a less degree than the cord; the posterior much more than the anterior. The acute process was at its height in the dorsal region. The gray matter was also affected, apparently in proportion to the severity of the secondary acute change—*i. e.*, most severely in the dorsal region—the smaller arteries were here and there thickened, the peripheral nerves were degenerated, but only to a moderate degree.

It was not assumed that these changes in the cord were due to lead as a specific poison, though, at the same time, the evidence is that such myelitic changes as lead does set up are diffuse in character, and not coördinated with the typical peripheral nerve degeneration.

It was, however, thought more probable, in view of the circumstances under which such pathological processes had been seen in other cases, that the lead acted, if at all, by inducing a general and—through the thickening of the vessels—a local anæmia, thus intensifying the effects of other influences, of which one might be an hereditary tendency.

Another case was cited to show that lead in drinking-water may cause outbreaks of acute indigestion in children, while other children, exposed to the same influences, may be wholly unaffected.

A number of observations made on Boston drinking-water by Dr. E. M. Greene were reported, showing the frequency with which lead is present, and the length of time required to rid a pipe wholly of its presence.

DR. HAROLD C. ERNST, of Jamaica Plain, Mass., then read a paper, entitled

HOW FAR MAY A COW BE TUBERCULOUS BEFORE THE MILK BECOMES DANGEROUS AS A FOOD SUPPLY.

The observations which he reported were made at the instance of the Massachusetts Society for the Promotion of Agriculture. The surroundings of the animals used were prepared in the most careful manner; 114 samples of milk were examined for the bacillus. These were obtained from 36 cows suffering with tuberculosis of some organ other than the udder; 17 samples were found to contain tubercle bacilli. These 17 specimens came from 10 cows. The cream was found to contain bacilli as often as the milk. The bacilli were present with a fair degree of constancy.

Well animals were then inoculated with the result of inducing the disease in 50 per cent. of the cases treated. Feeding experiments were also made, with the result of inducing the disease in a number of calves and young pigs. The following conclusions were presented: 1, and emphatically, that milk from cows affected with tubercu-

losis in any part of the body may contain the virus of the disease; 2, that the virus is present, whether there is disease of the udder or not; 3, that there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis; 4, that, on the contrary, the bacilli of tuberculosis are present and active in a very large proportion of cases in the milk of cows affected with tuberculosis, but with no discoverable lesion of the udder.

DR. E. L. TRUDEAU, of Saranac Lake, New York, then read a paper on

HOT-AIR INHALATIONS IN PULMONARY TUBERCULOSIS.

(See page 337.)

Adjourned.

CORRESPONDENCE.

"OIL OF CEDAR."

To the Editor of THE MEDICAL NEWS,

SIR: My attention has been accidentally called to "oil of cedar" by a death in the practice of a professional friend. He tells me that about an ounce was taken with suicidal intent. Text-books are almost silent on the subject, and I find but few articles in the journals. The articles seen are conflicting. A partial explanation of the conflicting accounts I find in the fact that two or three entirely different articles are sold under the same name. Two of these are manufactured, the one from the tops and the other from the wood of the *Juniperus Virginiana* or red cedar. The other is made from the *Thuja occidentalis*, sometimes called the white cedar or arbor vitæ.

"Oil of cedar" is to be found in almost every drug-store, and is frequently used as a vermifuge. It is also used in liniments, as an abortifacient and as an emmenagogue. I find here that the Thuja oil is the one most commonly kept. In one store there were two specimens. The one was labelled "Oil of Cedar, Red, Pure," which, I was informed, was the oil of red cedar, and when first received was red in color, but had become white. This was clearly *not* the oil of red cedar, but the Thuja article, judging from the odor. The other bottle was marked "Oil of Cedar, Pure," and I was told that this was the white cedar oil. I could in that detect not the slightest odor of the Thuja.

It is my purpose to make some investigations as to the oils to determine their physiological action. I will, therefore, be greatly obliged to any members of the profession who may aid me by giving me therapeutical or toxicological notes of cases. Such writers will receive due credit; they will please let me know which of the oils was used, so far as possible.

HENRY BIXBY HEMENWAY.

524 S. PARK ST., KALAMAZOO, MICH.,
September 21, 1889.

NEWS ITEMS.

The Mortality of Foreign Cities.—The annual death-rate per 1,000 in the principal foreign cities, according to the last weekly returns communicated to the Registrar-General, is as follows: Calcutta, 26; Madras, 40; Paris, 21; Brussels, 20; Amsterdam, 18; Rotterdam, 18; The Hague, 24; Copenhagen, 24; Stockholm, 17; Christiania, 26; St. Petersburg, 33; Berlin, 20; Hamburg, 23; Dresden, 28; Breslau, 27; Munich, 42; Vienna, 19; Prague, 22; Buda-Pesth, 30; Trieste, 23; Rome, 22; Turin, 30; Venice, 26; Cairo, 67; Alexandria, 44; New York, 28; Brooklyn, 25; Philadelphia, 22, and Baltimore 21.—*Medical Press and Circular*, September 4, 1889.

A New Hospital for Denver.—We learn, through the *Boston Medical and Surgical Journal*, that Denver, Colorado, has just completed a $30,000 hospital.

Death of Dr. Maurice Perrin.—The death is announced in Paris of Dr. Maurice Perrin, President of the Académie de Médecine, Inspector of the Service de Santé, formerly Director of the School at Val-de-Grâce, Physician-in-Chief of the Army of Marshal MacMahon in 1870, Commander of the Legion of Honor. Dr. Perrin commenced his career by teaching military medicine and ophthalmology at the Military School of Medicine. He was the author of several well-known works; among them may be cited, *Du Rôle de l'Alcool et des Anesthétiques dans l'Organisme*, a treatise on Surgical Anæsthesia (jointly with M. Lallemand), and a treatise on Ophthalmoscopy and Optometry.—*British Medical Journal*, September 14, 1889.

The University of Berlin and Poor Students.—It is reported that the Senate of the University of Berlin deprecates the substitution of free study for poor students in place of the present system of allowing such to obtain instruction and attend lectures on credit. The Senate believes that such an innovation might make it impossible for the poorer men to matriculate, as they might have too much pride to accept as a gift what they now merely get on credit.

NOTES AND QUERIES.

CONIUM OINTMENT IN PAINFUL RECTAL TROUBLES.

To the Editor of THE MEDICAL NEWS,

SIR: The conium ointment recommended by Whitla for painful rectal troubles can be much simplified and made of more general use by substituting for the *succus conii* of his formula the *alkaloid coniine*. I have used an ointment made according to the formula given below in a number of cases, and the success is all that is claimed by Whitla for the original combination. This is the formula:

℞.—Coniine	gr. ij.
Sol. ferri persulph.	ʒss.
Vaseline	℥j.

M. ft. ung.

Very respectfully yours,

O. T. SCHULTZ.

MT. VERNON, IND., September 21, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE TWO WEEKS ENDING SEPTEMBER 21, 1889.

BEARDSLEY, G. S., *Medical Inspector*.—Granted six months' leave, with permission to go abroad.

RUTH, M. L., *Surgeon*.—Order granting furlough revoked, and placed on waiting orders.

Medical Director HUDSON, *Medical Inspector* WOODS, and *Surgeon* DICKINSON will continue as President and members of an Examining Board for examination of applicants for the position of Assistant Surgeon in the Navy, at San Francisco, California, until June 30, 1890.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, OCTOBER 5, 1889. NO. 14.

ORIGINAL ARTICLES.

THE RELATIONS BETWEEN CHLOROSIS, SIMPLE ANÆMIA, AND PERNICIOUS ANÆMIA, INCLUDING LEUCOCYTHÆMIA AND HODGKIN'S DISEASE.[1]

BY FREDERICK P. HENRY, M.D.,
PHYSICIAN TO THE PHILADELPHIA HOSPITAL.

THE title of the subject which I have the honor to discuss before this Association, viz., the Relations between Anæmia, Chlorosis, Pernicious Anæmia, etc., might be criticised on the ground that it assumes certain relations to exist between these various affections of the blood. To such criticism it might be replied that the selection of such a title is the expression of the universal medical belief that these affections are allied, and that it is in the highest degree improbable that such a practically unanimous verdict can be erroneous.

Without stopping to mention any of the numerous historical instances in which the prevailing medical belief has been erroneous, I will begin by pointing out that in the discussion of this subject everything depends upon what is understood by the term Relation.

While we are justified in speaking of kindred diseases, there are no facts to warrant the belief that one affection can be converted into another, or that the cause of one disease can be so modified by its habitat and general environment as to excite another which is, by common consent, entirely different.

The best example of kinship is afforded by the infectious diseases, which originate, not in the same, but in a similar manner. No nearer relation than this has yet been recognized in disease. In the remotest past there may have been one pathogenic organism, the source of all the ills to which flesh is heir, but at the present time there are many such, and their differentiation is complete and permanent.

There are, therefore, three questions to be discussed:

1. Are chlorosis, simple anæmia, pernicious anæmia, etc., separate diseases?
2. Are they of kindred nature?
3. Are they different stages of one disease?

I will first consider pernicious anæmia, because the determination of its status is of fundamental importance. It is admitted by those who argue most forcibly in favor of the independent nature of this disease, that its clinical features are common to a number of affections, particularly cancer and atrophy of gastric glands. They have also been repeatedly associated with the presence of parasites in the intestinal canal, such as anchylostomum duodenale and bothriocephalus latus. In these and other affections the blood has presented the characteristics of pernicious anæmia, viz.: 1. Great diminution of volume. 2. Enormous reduction of the number of the red corpuscles, sometimes to ten per cent. of the normal—*i. e.*, the blood may contain 500,000, instead of 5,000,000, of these bodies to the cubic millimetre. 3. Poikilocytosis—*i. e.*, remarkable alterations in the size and shape of the red corpuscles. 4. Microcytosis, by which is meant the presence in the blood of numerous minute spherical, yellowish-red corpuscles, resembling oil-drops; these are not constantly present. 5, and most diagnostic, a relative richness in hæmoglobin. The percentage of hæmoglobin may equal, exceed, even double, that of the red corpuscles. 6. No absolute increase in the number of the white cells.

By one set of writers it is argued that when, in the course of cancer, atrophy of the stomach, or other disease, the above-mentioned striking changes in the blood are observed, the case is not one of pernicious or idiopathic anæmia, as they term it, because a well-marked lesion is present. If, however, the same alterations of the blood are present, and at the autopsy no lesions can be found except those that are manifestly secondary to the blood-change, such as fatty degeneration of the heart and intima of blood-vessels, then the case is one of pernicious or idiopathic anæmia. For example, in 1886,[1] I reported, in conjunction with Prof. Osler, a case of atrophy of the secreting structures of the stomach with every clinical feature of pernicious anæmia. About the same time I had under observation another patient, a woman, whose symptoms and blood-changes were identical with those of the above-mentioned case.

"After an illness of more than a year she died, and at the autopsy, at which I was present, no lesion was found to explain the profound alteration of the blood. According to most authorities, the first of these cases, in which a lesion was found, to which the symptoms might be reasonably attributed, is, for that very reason, not a case of pernicious anæmia. The second case, on the other hand, is one of pernicious or 'idiopathic' anæmia, because a lesion, to which the symptoms might be attributed, was not found."[2]

[1] Read before the Association of American Physicians, September, 1889.

[1] Amer. Journ. of the Med. Sciences, April, 1886.

[2] Anæmia. By F. P. Henry, M.D. Philadelphia, 1887.

This kind of reasoning appears to me very unscientific. In both cases there were the same blood-changes, viz., those universally recognized as pathognomonic of pernicious anæmia. In one, the cause of these changes was manifest, or, rather, became so after a careful microscopical examination of the stomach. In the other, it eluded the minutest investigation. The pernicious blood-change was a process common to a known and an unknown cause, and not a separate or independent disease.

An independent disease is one which rests upon a constant anatomical basis, or is invariably produced by the same specific agent. Processes of disease, on the other hand, are common to a number of distinct and independent affections, the most widely distributed of these processes being fever, inflammation, and anæmia. Anæmia may be either a disease or a process—a disease where directly dependent upon a lesion of one of the hæmatopoietic organs; a process when not so dependent. From this point of view, the uniform blood-changes of pernicious anæmia are due to a disturbance of nutrition of the profoundest character, which may arise from a number of causes, some known and others unknown. It is, therefore, nothing more than a disease-process, and as such related both to anæmia and chlorosis.

Let us now inquire more particularly as to the mode in which this profound anæmia is produced, whether by a defect of hæmogenesis, an excess of hæmolysis, or by a combination of both.

The causes of anæmia have been divided by Coupland into two classes: "deficiency of income and excess of expenditure," and, according to most writers on diseases of the blood, chlorosis is a typical example of the former. In that affection there is a deficient assimilation of iron, which is accounted for in a more or less satisfactory manner by various theories. The most prevalent is that of Bunge, which has been practically adopted by Sir Andrew Clark. Until quite recently, no satisfactory explanation could be given of the efficacy of iron in chlorosis, and especially of the necessity of administering it in large doses, for it was well known that very little of this drug was absorbed. It was also known that our food, which, when in proper amount and variety, contains more iron than we need, does not contain this metal in inorganic form, but in an exceedingly complex organic union. Human milk, which contains the merest trace of iron, supplies all that is needed for the wants of the rapidly growing infant. Nearly all our food-substances contain iron, and there is probably no drinking-water in which traces of it cannot be found. Zander[1] examined the water from three hundred springs, and found iron in every specimen. The same observer examined the feces of chlorotic patients before they had been placed upon any treatment, and found iron in them in considerable quantity—a sure proof that there was no want of this metal in the food. The conclusion, therefore, must be that there is, as already stated, something which interferes with the digestion and assimilation of the superabundant iron contained in the food; and this something is believed by Bunge to be sulphur.

In chlorosis, as is so emphatically insisted upon by Sir Andrew Clark, digestive disturbances are exceedingly common. Abnormal fermentations and decompositions take place in the gastro-intestinal tract, and give rise to the formation of quantities of sulphides which decompose the iron contained in the food, and completely unfit it for the purpose of nutrition. By administering an inorganic preparation of iron we simply offer a bait to these sulphides, which they seize upon and so allow the organic combinations in the food to escape and to be absorbed. This theory explains also why it is often necessary to administer large quantities of iron, for in such cases the sulphides are supposed to be formed in large amount, and to need corresponding quantities of iron to saturate them.

The blood of a healthy adult contains only about forty-five grains of iron (three grammes), and, therefore, in severe cases of chlorosis there is only a deficit of about one scruple of this metal. Why then is it so often necessary to administer colossal doses of iron in order to cure a case of chlorosis? Evidently because the iron plays some other *rôle* than that of a food. The theory of Bunge, to which I have just alluded, offers the most satisfactory explanation of its mode of action.[1]

There are other theories of chlorosis supported with equal ingenuity, such as those of Zander[2] and Landwehr,[3] which, in accordance with the division of labor agreed upon between us, I leave to the consideration of the co-referee in this discussion. Suffice it to say that they all unite in referring the cause of chlorosis to a defect in hæmogenesis.

I have entered into these details concerning chlorosis because it is universally conceded to be a typical example of defective hæmogenesis, and because I wish to compare it with another disease—pernicious anæmia, which is now generally attributed to excessive hæmolysis. This opinion, now prevalent, of the nature of pernicious anæmia, is largely due to the elaborate investigations of Dr. William Hunter.[4] This observer not only believes that the blood-changes of pernicious anæmia are essentially hæmolytic, but that "hæmogenesis is so little interfered with that it is generally in excess of the normal." The arguments of Hunter in favor of the

[1] Virchow's Archiv, Bd. 84, 1881.

[1] Zeitschrift für physiologische Chemie, 1885. [2] Loc. cit.
[3] Archiv für die gesammte Physiologie, 1886, Bd. 39, S. 193, and Bd. 40, S. 21.
[4] Lancet, Sept. 22 and 29, Oct. 6, 1888.

independent nature of pernicious anæmia are the most powerful that have yet been advanced. They may be summed up in the concluding paragraph of his valuable paper:

"In pernicious anæmia the seat of disintegration [of the red corpuscles] is chiefly the portal circulation, more especially that portion of it contained within the spleen and the liver, and the destruction is effected by the action of certain poisonous agents, probably of a cadaveric nature, absorbed from the intestinal tract."

Hunter admits that the clinical features of pernicious anæmia are often associated with various gastro-intestinal lesions, especially cancer of the stomach and atrophy of the gastric glands, and with intestinal parasites, but believes such association to be accidental:

"This conclusion is based chiefly on two considerations: (1) that similar anatomical changes, sometimes even more marked, are constantly to be met with in cases presenting none of the features of pernicious anæmia; and (2) that cases of pernicious anæmia are constantly met with in which no such gross anatomical changes are to be found."

Atrophy of gastric glands has often been observed in association with the clinical features of pernicious anæmia, and it is believed by some, myself among the number, to be a cause of that disease-process. The same gastric lesion has existed without the clinical features of pernicious anæmia, and this is one of the reasons why Hunter regards the latter as representing a distinct and independent disease superadded to the former. When closely looked into, this argument loses much, if not all, of its force. The function of the stomach is very complex, and may be largely supplemented by that of the intestine. In fact, in the opinion of some of the best authorities, gastric is merely preparatory to the more perfect intestinal digestion, the office of the stomach being chiefly to coagulate milk and liquefy albuminous bodies. It has been found that a dog whose stomach has been excised may be nourished for an indefinite period by placing food in its duodenum, and there would, I think, be little difficulty in proving that of the various functions of the stomach, the motor is of paramount importance.[1] As I have remarked elsewhere:

"The important part assigned by nature to intestinal digestion, coupled with the fact that it may entirely supplement the action of the stomach, has led Jaworski to attribute a subordinate *rôle* to the stomach, which he regards as a species of warm chamber, in which the food is detained for a time prior to its delivery to the intestine. This view reminds one of the Hippocratic theory of the coction of food by animal heat."[2]

These well-known facts offer one explanation why atrophy of the gastric glands is sometimes associated with the symptoms of pernicious anæmia; at others not so associated. The difference depends upon the preservation or impairment of the motor function of the stomach. The fact that "cases of pernicious anæmia are constantly met with in which no such gross anatomical changes" (as those of cancer and atrophy) "are to be found" affords no proof whatever, as Hunter seems to think it does, of the independent nature of pernicious anæmia. On the contrary, it rather tends to prove that there are two kinds of pernicious anæmia, a structural and a functional.

I have just shown that a motor insufficiency of the stomach may be one of the causes of pernicious anæmia. This is generally associated with gross anatomical lesions, such as cancer, atrophy, fibroid thickening, etc. A pernicious anæmia arising under such circumstances may be called structural or organic. There is good reason to believe that a chemical insufficiency of the stomach, long continued, especially if associated with intestinal indigestion, may also give rise to the symptoms of pernicious anæmia. Under these circumstances it would be of the functional variety.

Recent observations have shown that the gastric juice has other functions besides those of curdling milk and liquefying albuminous substances.[1] Although proved by Spallanzani, more than a hundred years ago, to be possessed of antiseptic properties, it is only quite recently that its destructive action upon various microörganisms has been rigorously demonstrated. The facts thus established have an important bearing upon Hunter's theory that the blood-corpuscles in pernicious anæmia are destroyed in excessive numbers by a cadaveric poison absorbed from the gastro-intestinal tract. In cancer and atrophy of gastric tubules the gastric juice is notoriously of defective composition, and a deficit of hydrochloric acid has also been observed in certain neuroses of the stomach. With the two first-mentioned conditions the clinical features of pernicious anæmia are often associated, and they have also in a number of instances been clearly of neurotic origin. Several typical cases of pernicious anæmia have been reported by Stephen Mackenzie, of London; R. G. Curtin, of Philadelphia, and others, which had their origin in a profound shock to the nervous system. Probably in all these cases, certainly in the two first-mentioned classes, the antiseptic influence of the gastric juice has been withdrawn from the gastro-intestinal tract and the formation of ptomaines has proceeded therein to an abnormal extent. In this manner the origin of the supposititious cadaveric poison of Hunter may be accounted for.

[1] *Vide* Klemperer: Ueber die motorische Thätigkeit des Magens. Deutsche medicinische Wochenschrift, Nov. 22, 1888.

[2] American Journal of the Medical Sciences, Nov. 1888, p. 498.

[1] De l'Action du Suc gastrique sur quelques Microbes pathogènes. Par MM. J. Straus et R. Wurtz. Arch. de Méd. Exp. et d'Anat. Path., 1 Mai, 1889.

I will now point to what seems to me another imperfect link in Hunter's chain of reasoning. In his article in the *Practitioner*,[1] in which he discusses, and answers in the affirmative, the question whether pernicious anæmia is a special disease, he acknowledges his adherence to the general opinion that chlorosis is caused by defective hæmogenesis, and attributes this defect to a cadaveric poison which destroys the iron contained in the food we eat. This, as is well known, is the theory of Bunge. Now it seems to me illogical to attribute to one hypothetical ptomaine, that of chlorosis, a power of interfering with hæmogenesis, and to another, that of pernicious anæmia, a power of increasing hæmolysis.

Hæmolysis is increased in pernicious anæmia. This is proved beyond doubt by the able researches of Hunter; but it is, in my opinion, *because of defective hæmogenesis*. The red corpuscles in this affection are abnormally weak and perishable, as is proved by the fact observed by Copeman[2] that their hæmoglobin crystallizes out of them with great readiness. I am not alone in this opinion. In a recent discussion of a case of hæmoglobinuria in the London Medical Society,[3] Dr. Stephen Mackenzie "insisted upon the fact that in essential or pernicious anæmia there appeared to be some defect in the formation of the corpuscles, in addition to their rapid destruction."

I trust that I have made it plain that, in my opinion—1. Pernicious anæmia is not an independent disease. 2. It is closely related to chlorosis. 3. It may be the terminal stage of other diseases, and especially of cancer of the stomach and atrophy of the gastric tubules.

The grounds on which I believe pernicious anæmia and chlorosis to be related are not merely theoretical, for I have seen several cases and published one[4] in which a transition between the two affections was, in my opinion, plainly evident, and Trechsel[5] has observed two similar cases. The transition from pernicious anæmia to chlorosis may be observed in any case of the former disease in which marked improvement occurs. Under such circumstances the red corpuscles lose their irregular contours and become circular in outline; they increase in number, and, most important of all, their percentage of hæmoglobin, which may have been equal, or superior, to that of the number of the corpuscles, is now much below the latter. The change is so marked that the case which, seen at its worst stage, would have been unhesitatingly set down as pernicious anæmia, would now, with equal certainty, be regarded as one of chlorosis.

The constant presence of fever in pernicious anæmia can no longer be regarded as a point of distinction between that affection and chlorosis, for hyperpyrexia has been frequently observed in the latter, and would, according to Jaccoud,[1] be more often found if looked for. In fact, Trazit[3] devotes his thesis to the consideration of febrile chlorosis.

The origin of pernicious anæmia has been attributed to microörganisms by Frankenhauser,[3] Planchard,[4] and others. The former describes certain minute bodies supposed to be micrococci which he has observed in the blood of several cases of pernicious anæmia. In the liver cells of the same cases he detected threads resembling those of leptothrix buccalis. All of Frankenhauser's patients had carious teeth, and these he believed to be the source of the microörganism of pernicious anæmia.

This theory has found very few adherents, and it is worthy of remark that the latest work on pathological histology,[5] by a countryman of Frankenhauser, makes no mention of it.

(To be concluded.)

[1] The Practitioner, August, 1888.
[2] Lancet, May 28, 1887.
[3] Brit. Med. Journ., May 4, 1889.
[4] THE MEDICAL NEWS, July 3, 1886.
[5] Rev. méd. de la Suisse Romande, June 20, 1888.

[1] La Semaine médicale, August 8, 1888.
[2] Journal de Méd. et de Chir., November, 1888.
[3] Centralblatt für die med. Wissensch., 1883, p. 49.
[4] De l'Anémie dite pernicieuse progressive. Thèse de Paris, 1888.
[5] Practicum der pathologischen Histologie, von Dr. Oskar Israel, 1889.

WHITE LEAD IN THE TREATMENT OF ERYSIPELAS.

BY E. STUVER, M.S., M.D.,
OF RAWLINS, WYOMING TERRITORY.

DURING the last four or five years I have treated a number of cases of erysipelas with ordinary white lead ground in oil, thinned to a proper consistency with Japan dryer, and so prompt and efficient has been its action that I desire to call attention to its merits.

I have tried quite a number of the most highly lauded remedies, including the combination of sulphichthyolate of ammonium and lanolin, which is claimed by many to be a specific in this disease, but in my hands white-lead paint has exerted a more favorable influence than anything else; it very promptly relieves the burning pain and feeling of tension which are so marked in severe cases; it limits the spread of the disease process, and forms an impermeable covering over the affected parts, thereby preventing the dissemination of diseased particles. If this disease, as is now generally admitted, be caused by pathogenic microörganisms, this power of the treatment to limit the spread of the disease germs should lead to its more general adoption.

The following cases will illustrate the advantages above indicated:

Case I.—I was called to see Mrs. M., who was approaching full time with her eighth child, and found a clearly defined erysipelatous inflammation on the right side of the nose, which I treated by painting the swollen parts with a mixture of equal parts of collodion and castor oil, and giving internally a mixture composed of quinine, iron, and simple syrup. Under this treatment the pain and swelling continued to increase until the disease had extended over both cheeks and around the eyes, which were nearly closed, and involved both ears, which were greatly swollen. A blister about one-half inch in diameter had formed on the right cheek bone. This having been covered with absorbent cotton and the parts thoroughly cleaned, I applied a thick coat of the white lead paint over the whole surface, extending slightly beyond the margin of the inflamed parts, and ordered it to be repeated three or four times a day. The first application almost immediately relieved the pain and discomfort, and while the swelling did not begin to subside for about twelve hours, the disease extended no further, and she obtained a good night's rest.

Three days after the onset of the attack, I was called to the case and found her in active labor, which terminated without any trouble in a couple of hours. Recognizing the danger of the situation, rigid antiseptic precautions were taken to avoid septic infection. A supply of sanitary towels (absorbent cotton enclosed in a light cheese-cloth material) were immersed in a 1 to 500 bichloride of mercury solution, squeezed out, dried, and kept constantly applied to the vulva; the patient was instructed under no circumstances whatever to touch the genitals or make applications to same; the nurse who changed the cloths and washed the parts each time used a strong solution of the bichloride to render the hands aseptic; the genitals were washed twice a day with a 1 to 1000 bichloride solution, and the nurse was not allowed to paint or in any way touch the diseased face; the husband attended to this part of the treatment. Under this management the case progressed rapidly to recovery, the temperature and pulse respectively falling from 101⅗° and 120 per minute on the 14th, to 98° and 88 per minute on the 17th. The inflammation rapidly subsided, and on the 20th the exfoliative process was well under way, leaving the skin smooth, soft, and white. In this case I am convinced that the impermeable coating formed by the lead paint did much to lessen the danger of infection.

Case II.—Mrs. N. was taken sick with chills and fever; was treated by another physician for several days, but continued to grow worse. Five days later I was requested by the husband to see the case, and found the ears, cheeks, and nose largely swollen and of a purplish color; quite a number of vesicles were on the swollen parts; there had been considerable diarrhœa, but this was now subsiding. The pulse was 116 in the morning and afternoon. The temperature varied from 103° to 104¾°. Applied white paint freely to inflamed area, and gave internally quinine and large doses of the tincture of chloride of iron. The pain and soreness, which were very marked, soon diminished. On the next day by 2 P. M. the pulse was still 115, and the temperature 104⅕°; the ears were not so much swollen, but the inflammation had extended to the scalp. The hair was, therefore, clipped off short, exposing a surface covered by an eczematous eruption with small, yellowish scabs; this was worst on top of the head, but existed to a certain extent over the whole scalp; the erysipelas was found to extend over the parietal and temporal regions to the vertex and posteriorly to the lambdoidal suture—this whole region was found to be swollen, infiltrated, and painful on pressure; the head was thoroughly washed with a mild soap and warm water, carefully dried, and then completely covered with the lead paint.

The next day the pulse and temperature remained unchanged, but the head was feeling better, though the eyes and frontal region were badly swollen. The lips were dry and sordes were on the teeth. Six additional grains of quinine night and morning were now added to the treatment. Twenty-four hours later the pulse and temperature had fallen very much. the latter from 103° to 101⅖°.

She had passed a restless night. The nostrils were occluded and secretion collected in the trachea; the appetite, however, was better, and she took a considerable quantity of milk and a soft boiled egg. I gave her the following:

℞.—Pepsini puris in lamellis (P. D. & Co.) ℈j.
Aquæ . . . . . f℥j.
Ext. cascaræ sagradæ fl. . . f℥ij.
Spts. frumenti . . . . f℥iij.
Vini ferri et carnis . q. s. ad. f℥viij.—M.
Sig.—Large tablespoonful three or four times a day:

On the tenth day the pulse in the sitting position was 103; temp. 99⅘°; and she was looking and feeling much better.

The disease rapidly subsided, and under a tonic treatment she made a prompt and satisfactory recovery. In this case the disease assumed a very severe type, and at one time I had very serious doubts whether it would end in recovery. The lead paint acted very nicely, promptly relieved the pain and checked the spread of the morbid process.

In two other cases, one a boy of about thirteen, the other a man, I first used sulphichthyolate of ammonium and lanolin in equal parts, but this only produced moderate relief; in both cases the white-lead paint was substituted with markedly advantageous results.

Other cases might be cited, but the above are sufficient to justify the following conclusions, viz.:

1st. White-lead paint promptly relieves local pain and tenderness.

2d. It limits the spread of the disease.

3d. By forming an impermeable coating it prevents dissemination of the disease germs, and consequent infection of abraded or wound surfaces.

ACUTE INTESTINAL OBSTRUCTION COMPLICATING STRANGULATED HERNIA; HERNIOTOMY, WITH SUBSEQUENT LAPAROTOMY; RECOVERY.

BY J. HOWELL WAY, M.D.,
OF WAYNESVILLE, N. C.

AT 12 P. M., on April 11th, I was called to the neighboring town of Clyde in consultation on the case of J. M., a farmer, æt. thirty-one, of small, slender build, and weighing only about one hundred and twenty-five pounds, but a man who, as his neighbors expressed it, "did twice as much lifting at the log-rollings as any man of his size." On my arrival I obtained from the attending physician the following history of his patient's illness:

Early on the morning of the 9th, feeling about as well as usual, save a sensation of being rather tired from his having been engaged in building a barn on the day previous, he shouldered a very heavy bag of corn, and, putting it on his horse, mounted and rode away to the mill, a little more than a mile distant from his home. While on the way he felt nauseated and experienced an uneasy sensation in his bowels, which continued to increase until soon after reaching the mill, when he felt chilly, experienced a considerable degree of abdominal pain, and vomited freely the contents of his stomach. Returning home, half an hour later, his sufferings were so augmented that it was deemed expedient to summon a physician. When he came, an hour later, the patient was frequently vomiting matter of a bilious character and suffering the most acute pain, which ranged from the umbilicus down to the right inguinal region. His bowels were constipated.

The diagnosis, as made at that time, was "bilious colic with constipation," and for the relief of which morphia *per os* was given, and a number of small doses of calomel were left to be taken during the day; also additional doses of morphia to be used if necessary to relieve pain. Both were given, and during the following night, on the recommendation of friends, three compound cathartic pills and two ounces of castor oil were also administered. Late in the night enemata were resorted to several times; at first a small amount of fecal matter was passed, but later the fluid returned unchanged and presenting the same appearances as when injected.

When seen by his physician on the following day, the patient's condition was much worse. Despite the free use of opiates *per os*, he had been unable to procure the least degree of comfort, or even momentary freedom from pain. His abdomen was very tympanitic, and also quite tender over almost its entire surface. He was extremely thirsty, and vomiting of a fecal nature now took place occasionally. He had still been unable to produce a movement of the bowels. Copious enemata were again administered, but with results as before.

The patient now, for the first time, observed a slight swelling in the right inguinal region, extending down over the spermatic cord into the scrotum just above the testicle. The attention of the physician was directed to this, and, though not fully able to satisfy himself that it was a hernial protrusion of the bowel, he practised taxis for some little time, with the result (as he thought) of almost entirely reducing the enlargement. A temporary truss was improvised and applied, and a messenger dispatched to procure a proper one. The liberal use of the cathartic agents mentioned above, to which was also added Epsom salts in full doses, was continued during the day, but no motion followed; the patient's sufferings were increased, and his general condition grew worse up to the time when I first saw him, on the evening of the 11th.

Having obtained this history of the patient from his physician, I proceeded to examine him, and elicited the following facts relative to his condition at that time.

On entering the room, an offensive odor, as of fecal matter, was noticeable. This, it was found a few moments later, was caused by the exhalations of the patient's breath, which was very offensive from his having vomited fecal matter several times during the few preceding hours. His face was wan and pallid, wearing a pinched expression suggestive of the intense pain he had endured so patiently during the two days past. His tongue was heavily coated, red at the tip and edges, very dry and glazed in appearance, and very tremulous when protruded. He was exceedingly thirsty, and constantly desiring water, of which he drank large quantities with much avidity. Decided anorexia was present, the mere mention of food being very repulsive to him. His respirations were forty per minute, and quite shallow, owing to the great abdominal distention present and the pain induced by the downward expansion of the lungs. Singultus was present, and had been for a few hours. The patient's abdomen was greatly distended and tender over its entire surface, being markedly so at a point about two inches above and slightly to the left of the right internal abdominal ring. Upon removing the truss, which did not fit very accurately, I observed a slight enlargement extending from the external ring down to a short distance above the right testicle. It was slightly tender, and communicated a doughy sensation to the fingers when manipulated. No impulse was visible in the swelling on the patient's coughing. Gentle but sufficiently prolonged manipulation failed to effect any reduction in its size. His pulse was 130 per minute, small and weak; his skin dry and parched; his temperature 102.8°.

Arriving at the conclusion, as I soon did, that we had to deal with a case of acute intestinal obstruction, and deprecating the use of cathartic agents, I advised the bringing of the patient profoundly under the influence of hypodermatics of morphia for a few hours, and in the event of that failing to relieve him an operation should be performed without further delay. One-half grain of morphine was given subcutaneously and repeated twice at intervals of half an hour, when the patient became more tranquil and slept for a few hours. Professional engagements necessitating, I was compelled to leave and did not return until noon on the 12th, when I found the general condition of my patient apparently much better, the pain having been so slight as

not to require a repetition of the morphia. But this improvement I was convinced, on careful examination, was only apparent, for there were symptoms pointing strongly to the beginning of what I feared would be fatal collapse. Feeling assured that intestinal obstruction was present, though not fully able to convince myself as to whether it existed alone at the abdominal ring or at the site within the abdomen, two inches above the ring, which was so acutely sensitive and painful, or at both, I advised an exploratory incision over the site of the inguinal canal, intending, if necessary, to extend it upward to the sensitive spot.

This being agreed to by my *confrères* in the case, I proceeded to operate. The patient was thoroughly anæsthetized by chloroform, and additional efforts were made to reduce the tumor, but without avail. The abdomen and pubes were then shaved and thoroughly cleansed. Pinching up a fold of integument it was transfixed, and an incision three inches in length, directed upward and outward over the rings, was made. The various hernial coverings were then carefully gone through until the peritoneum was reached. This, presenting a dark appearance, was opened and gave vent to two or three fluidrachms of dark grumous fluid having a putrefactive odor. A fold of omentum was now seen protruding from the external ring. It was of a dark purple color and emitted an offensive odor. The fibres of the external ring were freely divided and the omentum withdrawn until healthy tissue was reached. A silk ligature was then thrown around this *en masse* and the gangrenous portion removed. Examining the internal ring I found its margins torn so that it was quite patulous, but to my surprise the omental pedicle with a small loop of bowel which had come through the internal ring but had not passed out of the external ring, would not return to the abdominal cavity. I also observed that while there was not the slightest constriction of the bowel at the internal ring, it was intensely congested and its tissues swollen. I now continued my incision upward until the point the patient had complained of as being so sensitive was reached. Then by partially withdrawing the loop of bowel with the fingers of one hand and passing the index finger of the other along the course of the bowel deeply into the abdominal cavity I discovered the source of constriction to be a ligamentous fold or band under which the bowel seemed to have been suddenly forced and been unable to return. This was divided partly with a probe-pointed knife and partly by tearing it with my finger, and the bowel released. The site of the operation was thoroughly irrigated with a hot carbolized solution, a rubber drainage tube passed deep into the abdominal cavity, and the edges of the wound brought together by two sets of sutures, a superficial and a deep, each being of silk. The patient reacted from the operation finely. An hour later his bowels began moving. Between fifteen and twenty very loose, watery, feculent discharges took place within the next few hours, when it was deemed advisable to restrain further movements for the time being by hypodermatics of morphine.

From this time on the patient's progress toward recovery was rapid and not a single bad symptom occurred in the case; for only one or two days was the temperature as high as 101°. His appetite was excellent from the morning after the operation, though for a fortnight I restrained him to a fluid diet. On the eighth day the stitches were removed. A few days later he was out in the full enjoyment of his usual health and vigor.

LAPAROTOMY IN A CASE OF DERMOID CYST.

BY J. HERBERT DAREY, M.A., M.D.,
OF GRANGER, MINNESOTA.

ON the 8th of July I was called to see F. B., a girl of eleven years of age, whose parents had accidentally discovered that morning a protuberance in her abdomen. On examination a large symmetrical tumor was discovered extending from the hypogastrium two inches above the umbilicus. It was dull on percussion and had a firm elastic feel to the touch. It seemed to contain fluid. The abdomen measured twenty-eight inches at the umbilicus. The little girl had been growing rapidly, and was decidedly thin. She had had no symptoms of any kind, except that she had complained of not feeling very well in the spring. Next day I took her into Cresco, Iowa, and examined her there with Dr. Kessel. The tumor was not nearly so firm, and a solid growth was easily made out by deep pressure on both sides. We came to the conclusion that it was probably a dermoid cyst, and advised an early operation.

The patient was put on a mixture of ext. cascara sagrada fl. ℥v, and syr. rhei. aromat. f℥ss, twice a day, which caused her to have four or five loose passages daily, till the operation was performed. She was also given potass. acetat. gr. vijss, and ext. buchu fl. ℥xv, four times a day, For three days preceding the operation the urine had a sp. gr. of 1026, 1024, 1028, respectively, but contained no albumin or sugar. I secured a large, airy room for the operation, and had all the furniture removed and the floor and all the woodwork thoroughly scrubbed. I had several gallons of boiled water prepared for use if necessary.

On July 13th Drs. Kessel and Connolly, of Cresco, Iowa, came over to take part in the operation. The patient had been given a warm bath the night before and felt in good spirits. Dr. Connolly administered the ether; Dr. Kessel operated, I assisting him. Instruments were all put in boiled water, and ligatures, needles, etc., in a five per cent. carbolic acid solution. The belly was, first of all, scrubbed with soap and water, and was then washed with an ethereal solution of iodoform. The ether was not well taken at first, as it caused a copious mucous secretion in the throat and larynx, so chloroform was substituted for a few minutes, one-fourth grain morphine given hypodermatically, and after that she took the ether all right. The tumor was aspirated in the lower part but no fluid was obtained. Then an incision four inches long was made in the linea alba, and a careful dissection was made down to the peritoneum, which was opened, and a solid tumor came into view attached to the omentum for about six inches. Two

hypodermatic injections of 20 minims of whiskey were now given. A solid steel sound was introduced into the abdomen and swept around freely in all directions, showing that there were no other adhesions. The pedicle was found to be deep down in the pelvis on the right side. The adherent omentum was ligated with silk in sections, and cut off, and the upper part of the tumor aspirated, and about half a pint of bloody serum obtained. The incision was enlarged upward to about an inch above the umbilicus, and the tumor delivered outside of the body. The pedicle was ligated with stout silk in three pieces and the tumor removed. After satisfying ourselves that there was no oozing from the stump, it was allowed to drop back into the pelvis. It seemed to be attached to the broad ligament. The peritoneal cavity was now swabbed out with sponges dipped in a hot five per cent. boracic acid solution, till it was perfectly clean from blood-clots. The wound was closed by means of six deep and six superficial silk sutures. Iodoform was freely dusted over the wound and a dressing of carbolized gauze, padded with absorbent cotton, applied and a roller bandage outside of that. The time consumed during the operation was about an hour and a half. The tumor was as large as a fœtal head at term. On dissection it was found to contain a number of cartilaginous plates and alveolar processes in which teeth were found imbedded. The patient's pulse was 100 after the operation; no shock, and general condition good. She rallied well from the ether. The temperature, which had been 98.6° F. before the operation, rose to 100.2° F. in the evening after the operation. The pulse rose from 72 in the morning to 108 in the evening.

July 14. Patient rested well. Morning temperature 100.5°, pulse 120; afternoon temperature 101.2°, pulse 120; evening temperature 100.8°, pulse 116. No food of any kind was allowed for twenty-four hours, only a little water and cracked ice to suck when thirsty. Then a few teaspoonfuls of milk every hour were given.

15th. Morning temperature 99°, pulse 86; evening temperature 100.4°, pulse 90. Feels well; rested quietly.

16th. Morning temperature 100.3°, pulse 100; evening temperature 101.2°, pulse 92. This was the highest point the temperature reached. Next day it fell to 99.5°, and after that it remained about normal.

20th. All the superficial sutures and one deep suture removed. Wound looks nicely. No suppuration, except a drop about the deep suture, which was removed. Nothing but small quantities of milk every hour was allowed for the first week. Bowels moved for the first time to-day since operation by means of ʒj glycerin injections and the cascara mixture.

24th. Three deep sutures removed; wound healing nicely. Bowels keep open without much trouble.

26th. The two remaining deep sutures were removed. The wound has all healed by first intention, except about one and a half inches at the centre, where it gaped a little. Adhesive plaster was applied to draw the edges together. The patient was fed more liberally after this. She was kept in bed for four weeks, then allowed to sit up in an easy chair for a week, and after that was permitted to walk. Now she walks about wherever she wants and is gaining in flesh. She wears an abdominal bandage and will do so for a year.

REPORT OF A CASE OF RUPTURE OF THE BICEPS MUSCLE OF BOTH ARMS.

BY RICHARD WILSON,
STUDENT OF MEDICINE, UNIVERSITY OF PENNSYLVANIA.

THE following case of muscular rupture is believed to be unique and worthy of publication.

I would mention here that it was Dr. Walter F. Atlee who kindly furnished me the opportunity of examining this patient, and who urged me to publish the case.

John S. McCarthy, æt. fifty-four, white, weighing one hundred and eighty pounds, a baker by profession, of splendid physique, the muscles of his arms being particularly well developed—owing, no doubt, to his occupation, was returning home from his work on Christmas evening, 1888, when he was attacked in the street by three half-drunken young men. In the fight which ensued he knocked down two of them, and in attempting to give the third one a "left-hander," he missed his antagonist, heard a loud sound like the cracking of a whip, and his arm fell to his side almost paralyzed. The pain was intense. He presented himself at the Jefferson Medical College and was seen by the late Dr. S. W. Gross, who bandaged his arm, advised perfect rest, and said that nothing else could be done for him. A few weeks afterward he saw Dr. Pancoast, who wanted to operate on his arm, and suture together the two ends of the muscle. To this the patient objected, as he had to work to support his family. It was then he went to see Dr. Atlee, who agreed with Dr. Gross, that no operation was desirable. The patient did not give up his occupation, but continued working with his right arm. He could move his left arm, but could not make any effort with it. Six weeks after this accident he was again attacked, probably by the same persons, and having only one arm (the right one) to defend himself with, he struck out with it vigorously, and during the fight the biceps of that side gave way in precisely the same manner as the first one had done. The biceps broke as he struck a blow. He did not hear the sound like the cracking of a whip; for, he said, he was too busy fighting to be on the lookout for it. The right biceps does not seem as badly ruptured as the left one, but the rupture is almost complete. In April, 1889, he called to see Dr. Atlee. He then had both biceps muscles ruptured. It was after this that I saw him.

On examining the patient's arms, the deformity is at once apparent. Where the rupture took place (at the lower third), there is an unnatural depression, wide enough to admit readily three or four fingers, which terminates abruptly by an irregular elevation. Both muscles seem to have been torn in bulk; their tendons are intact and in their natural places. On pressing in the depression one can feel the aponeurotic sheath of the muscle standing out like a cord. The man can flex both forearms, and in this position the deformity is much more marked, due to the contraction of the two ends of the muscle. Undoubtedly the brachialis anticus muscle helps him a great deal in flexing the forearm. He did not stop working even after the rupture of the second muscle, having full power of moving his arms, but not being able to lift anything heavy. This was his condition when I saw him last, on August 1st.

Such is the history of this interesting case. A few remarks on the subject will, I think, not be amiss. The symptoms of this case are typical. As the diagnosis is made by the history, inspection, and palpation, I will recapitulate the symptoms: (1) A noise like the cracking of a whip; (2) a sharp, sudden pain, feeling like a blow from a stick or whip. The pain is constant, fixed, and intense, from the moment the rupture occurs; it diminishes with rest and position. The patient will get in a position that will put the muscle at rest. In two or three weeks there is left only a dull pain over the seat of the lesion. (3) The pain disappears when the muscle is at rest and returns when the muscle contracts. (4) A depression easily perceived which varies from a few millimetres to four or five centimetres; the space also varies with the position. (5) Ecchymosis appearing on the second or third day; this, however, is not constant, but often is absent. On the other hand, the hemorrhage may be quite considerable, reaching even half a litre (Charvot et Coullault), in which case it forms a tumor of variable size, doughy, and afterward becoming hard.

Muscular ruptures are very rare, and whether partial or complete, are usually not serious if early recognized and properly treated. But if not recognized, or neglected, a partial rupture may prove serious, especially if the patient continues the violent exercises which caused the first rupture of the muscular fibres. Where the muscular fibres are long and the tendons short, the body of the muscle breaks, while where the muscular fibres are short and numerous and the tendons long, the tendons break. Thus the rectus abdominis, the sartorius, the psoas, the iliac, the sterno-cleido-mastoid, and the biceps, though rarely ruptured, break the muscular fibres almost invariably. The extensors of the leg on the thigh, and of the foot on the leg, that are the opposite anatomically, rupture their tendons. Usually, the flexors rupture in their fleshy parts, and the extensors in their tendinous part. Ruptures are almost always complete when they affect the flexors, and incomplete or partial when they affect the extensors. The muscles which are known to rupture most commonly are, in the trunk, the rectus abdominis, psoas, and iliacus; in the neck, the sterno-cleido-mastoid; in the upper extremity, the biceps flexor cubiti; in the lower extremity, the sartorius and the rectus femoris. The extensors are ruptured much more rarely. Among other muscles, ruptures of which are on record, might be mentioned the gastrocnemius, the sphincter ani, of each of which Dr. D. Hayes Agnew reports a case, the rectus femoris, the deltoid, the longissimus dorsi. Ruptures of the muscles of the perineum during parturition are by no means an uncommon accident, in some cases extending completely through the sphincter ani. Partial ruptures are much more commonly met with than complete. Only a few fibres of a muscle give way, and they can be felt as a hard mass over the seat of the lesion. The accident is well known among tennis and foot-ball players. In England it has received the name of "poop" or "pope." It happens only to men who are not in training.

The accident always happens in the same manner; a man is running and suddenly feels a sharp pain in his leg and falls. He has to be helped off the field and in two or three weeks is well enough to go about.

Charvot and Couillault, in *La Revue de Chirurgie*, give an account of twenty cases of muscular rupture that they observed in some new recruits in a regiment of light cavalry. Eighteen of the cases were rupture of the rectus abdominis, occurring in the act of jumping on horseback from behind. From this account we see that: (1) Muscular ruptures are observed almost exclusively in young soldiers, at the time when they first begin to take violent exercise to which they are not accustomed. (2) The accident happens preferably to men not trained to gymnastic exercises. (3) Ordinarily the wounded man has received no previous injury that weakens the muscle. (4) Muscular ruptures are seldom complete; they are usually partial. (5) The same muscle is almost always ruptured at the same point by the same forced movement. (6) Muscular ruptures are indirect. The whole or part of the muscle is broken simply by a great effort, without external violence.

The mechanism of the rupture may be explained as follows: The anatomical muscle is made up of bundles of fibres, sometimes having different directions, and in some cases supplied with nervous filaments coming from different sources. In the daily movements all the muscular fasciculi, trained by habit, contract together under the influence of the will or of reflexes, to execute the movements with which they are familiar. Thus by a synchronous effort the muscle will overcome the resistance, even if very great. This is not the case when the muscle is forced to make a sudden violent movement to which it is not accustomed. There is a lack of unity in the muscular fibres, and they contract separately. At a given time at the moment of action, one group of fibres will have to support the whole effort. It is not astonishing, therefore, that it should break, if the resistance it has to overcome is considerable. This is the theory of Sédillot.

Another theory, that of Nélaton, is as follows: The nerves supplying the muscles give them a certain sense (called muscular sense), by means of which we are conscious of their degree of contraction, and thus we can exert our efforts in proportion

to the resistance we want to overcome. At the moment of a misstep, or a fall, etc., the muscle, stimulated by the instinct of preservation, contracts violently and instantly. The nervous impulse comes from the brain through the motor nerves, but the sensory nerve no longer carries the state of contraction of the muscle to the brain. The brain, therefore, loses the muscular sense, and continues sending contracting impulses to the muscle. If the muscle, under the influence of an excessive impulse to contract, finds an invincible obstacle to its contraction, it stretches beyond its physiological limit and breaks. The muscle may also break if, after having contracted, a mechanical force superior to that which controls it counterbalances suddenly its contraction. In voluntary movements the muscles sometimes may contract instantly and violently; their contraction may be excessive, and the rupture may then take place without the brain having time to become conscious of their state of contraction and moderate its motor impulses to prevent the accident. Therefore, whenever a rupture follows an instinctive contraction, or a quick violent voluntary movement, it is the result of the temporary suspension of the relations established by the sensory nerves between the brain and the muscle.

A post-mortem examination of a ruptured muscle shows that all the fibres are cut across at the same level. At this point there is an interval between the fragments of the muscle proportionate to their length, and always greater in complete ruptures. A little blood has extravasated between the two ends, and also in the surrounding connective tissue. It is not known whether the aponeurotic tissue of a muscle is ruptured or not. The wound heals in the usual manner by the exudation of plastic lymph, which undergoes contraction, vascularization, and organization, forming fibrous connective tissue. True muscular tissue is not formed again, the two ends of the muscle unite by a fibrous band which gradually thickens.

The prognosis varies with the severity of the rupture. The prognosis of a partial rupture is very favorable. If the rupture is very slight, it may get well in twenty days. Other degrees of rupture take longer time. When the rupture is complete, it takes from eight to twelve months before the muscle is as strong as before. For one year the patient must not make any violent effort with the ruptured muscle. As a rule, a rupture does no harm except to disable a man for several months. Excess of hemorrhagic extravasation is a complication which may prove serious, terminating in an abscess. Boyer gives an account of the only fatal case on record. It happened to a youth, seventeen years old, in attempting to lift a bucket full of water. Fever and insomnia set in; a fluctuating tumor appeared in front in the upper part of the thigh and the lower part of the groin, on the right side. He died on the tenth or eleventh day after the accident, and a post-mortem showed a rupture of the psoas muscle.

The treatment of this affection is very simple; usually perfect rest and relaxation will suffice. If necessary, poultices and anodynes may be applied locally. When the pain has passed away apply a tight bandage in such a manner as to bring the two ends of the muscle as near together as possible. This is best done by using three roller bandages. Apply each of the first two by beginning at one extremity of the limb and bandaging toward the rupture. If the ruptured muscle is in the trunk or neck, as the rectus abdominis and the sterno-cleido-mastoid, then the treatment consists only of rest and position, as a bandage cannot be applied. It is always prudent after a rupture of the abdominal muscles to recommend the patient to wear a belt to support the abdominal muscles, and not to engage in any violent exercise for several weeks after he is going about. By this means you prevent new muscular ruptures, or a secondary hernia from forming—fortunately, a rare accident. Dr. D. Hayes Agnew and others recommend suturing the two ends of the muscle together subcutaneously, when the muscle is of superior importance; and when the ends cannot be included thus by deep sutures, Dr. Agnew thinks it is a necessary and advisable procedure to open the wound and suture together the two ends.

Muscular ruptures for a long time have been unrecognized, and have been described as tears of the aponeurosis, luxations, sprains, and hernias of muscle (Nélaton). In 1781, Rousille Chamseru read before the Société Royale de Médecine several observations on the subject. The next year the elder Fagner also reported several cases. But of all the authors, J. Sédillot is the one who has contributed most from the surgical point of view. He first mentioned the subject in an inaugural dissertation in 1786, and in 1817 he presented a memoir on the subject to the Académie des Sciences.

CLINICAL MEMORANDA.

SURGICAL.

A Simple Method of Treating Umbilical Hernia in Infants.—If the treatment of umbilical hernia in the earlier weeks of infant life has proved as troublesome and annoying to others as to the writer, this description of a simple and effective method of treatment will not be out of place.

Agnew and others use a button of cork covered with chamois skin, and held in place by a broad strap of porous or rubber adhesive plaster encircling the trunk. Elastic bands, pads fastened to the binder, hard-rubber spring trusses, and various more complicated devices are also recommended. Most of these methods I have used, all with discomfort to the child, and unsatisfactory re-

sults. Porous plaster invariably irritates the skin, as does rubber adhesive plaster, and their removal causes a paroxysm of crying when the consequent straining is most undesirable. All absorbent pads become malodorous from retained perspiration, and are constantly moist from the daily bath. Bands extending around the waist interfere with respiration, peristalsis, and the development of the abdominal and lumbar muscles. Elastic bands are by far the worst in this respect. Pads fastened to the binder are constantly slipping out of place. The same may be said of trusses, which have the additional disadvantage of hurting a child that is not handled carefully.

An apparatus for successful treatment should be non-absorbent, non-irritating, and of such material that it will remain in place for at least a week, nothwithstanding daily bathing. It should not interfere with peristalsis, respiration, or development, and must be free from the possibility of hurting a carelessly handled child. Such requisites are combined in the following device, which differs slightly, but in important particulars, from others.

It consists of a hard-rubber, slightly oval, plano-convex lens, with a greater diameter of 3 cm., and thickness of 6 or 7 mm.; on the plane surface are two small wire loops facing each other at a distance of 2 cm. This is attached to the centre of an adhesive plaster strap, 2 cm. wide, and long enough to embrace three-fourths of the child's body, by thrusting the wire loop through the plaster and a small safety-pin through the loop. No plaster other than a reliable emplast. resin. of the Pharmacopœia should be used. In using, the hernia is reduced by the pressure of the button, and the warmed plaster quickly applied while the child is quiet. This will retain its position for from one to three weeks, unless considerable soap is used in the bath. When removal is desired, a few moments' soaking with soap and water will loosen it unnoticed by the child. If redness of the skin is produced, the cause will be found in the adulteration of the plaster with turpentine or Burgundy pitch.

Walter Chrystie, M.D.,
Physician to the Children's Dispensary,
University Hospital.

TOXICOLOGICAL.

Peculiar Case of Idiosyncrasy to Quinine.—The following case of idiosyncrasy appears worthy of being reported:

M. F. H., male, aged thirty-five, healthy; about five years ago became exhausted while working at a fire. For a stimulant he took some whiskey and quinine (how much he does not know). A short time afterward (one or two hours), intense itching of the dorsal and outer aspect of the middle phalanx of the right little finger set in, soon followed by the appearance of a large wheal. At the same time the glans penis, under the foreskin, was similarly affected. This latter became irritated and inflamed under wrong treatment (for gonorrhœa), and discharged pus for about a week; the finger getting well in about twenty-four hours. Six months later he took quinine again, followed by the same result. And again, in about a year, he had a similar experience.

About two years ago, being ill, the doctor prescribed quinine, but, remembering his former experience with it, he refused, until assured the dose was very small. But he suffered exactly the same as on former occasions. This time, however, the swelling and intense irritation of the glans were much relieved by application of a solution of lead and opium.

La Crosse, Wis. Edward Evans, M.D.

A Case of Chloroform Narcosis.—On December 10, 1888, Mrs. C., aged twenty-four, primipara, a remarkably robust and healthy young woman, was confined, and after a tedious labor of twenty-four hours, delivered of a large male child.

In the later stages of the labor chloroform was given during each pain. A right occipito-posterior position was diagnosed, and with the patient in a semi-conscious condition from the chloroform, three trials were made to deliver with Hodge's forceps; in each attempt the instruments slipped.

Dr. Randolph Winslow was at once sent for, with the request that he bring his instruments. He came promptly, and kindly administered the anæsthetic, when, with Simpson's forceps, the labor was terminated about 10 P. M., December 11th, with complete rupture of the perineum and also two lateral tears of the vagina.

Owing to the exhausted condition of the patient and bad light, operation on the torn parts was deferred until the next morning, when Dr. Winslow sewed up the lacerations; chloroform being administered by Dr. F. M. Latham, which the patient took nicely with no trouble whatever. When the stitches were removed in about ten days, it was found that the operation was only partially successful, the deep lateral vaginal tears having healed, but the perineal rent still remaining.

February 14, 1889, Mrs. C. was again put under chloroform by Dr. Latham; Dr. Winslow operating assisted by Dr. John Winslow and the reporter of this case. One ounce of whiskey was given beforehand. She again took the anæsthetic nicely and Dr. Winslow had completed part of the operation, when Dr. Latham stated that the patient had stopped breathing, while no movement of the heart could be detected.

She was immediately held up by her limbs with her head as low as possible, artificial respiration was resorted to, and hypodermatic injections of whiskey given in different parts of the body. After some five or ten minutes signs of renewed animation appeared, which were very materially hastened by nitrite of amyl applied to the nostrils.

The operation was completed later on with ether.

Squibb's chloroform was used in this case—in fact, that remaining in the bottle from the previous operation, about two ounces. Thinking perhaps some deterioration might have taken place in the interval of the two operations, I wrote to Dr. E. R. Squibb. In his reply he states: "Chloroform in a corked vial does not deteriorate in quality until the cork becomes shrunken by the action of the chloroform vapor, so as to open it to the air. In your case, however, I think there could hardly have been any doubt in regard to the perfectly good condition of the chloroform used, and that it could hardly have possibly been the cause of the accident. That is to say: two ounces of chloroform in an eight-ounce vial, even if exposed to light during the whole time of two months, could not, under any ordinary circumstances, have undergone a sufficient amount of decomposition to be injurious; besides, had the decomposition been considerable, the odor of hypochlorous acid would have been such as to make all bystanders sensible of its presence and to make them cough."

The odor of this chloroform was pure.

In looking over a number of medical journals it is found, in many of the reported deaths from this drug, the deceased had, just as in this case, taken the anæs-

thetic once or twice before, with no trouble whatever. Might it not be a subject worthy of investigation as to whether a patient is more liable to extreme narcosis or death when he has taken the drug on several previous occasions?

BALTIMORE, 1889. JAMES M. CRAIGHILL, M.D.

MEDICAL PROGRESS.

Thalline and Thallium.—These two substances, which have not a trace of similarity in their natures, are, in consequence of the similarity of their names, very frequently confounded by both druggists and physicians;—thallium sulphate, especially, being erroneously ordered or prescribed in many cases where thalline sulphate is meant. In the pharmaceutical Latin nomenclature used in several European continental countries—where thalline is called thalli*num* instead of thalli*na*, the similarity is, unfortunately, still more apparent.

Numerous inquiries and communications from professional circles show, indeed, that the confusion referred to is widespread, and has taken such firm root that many medical men to-day actually believe both these names, thalline and thallium, to signify but one substance; whereas, in truth, they signify two substances about as different as they can be—thalline being a highly complex organic compound, an artificially grouped combination of coal-tar derivatives,—while thallium is a mineral and elementary substance—a metal!

But this is not all—confusion, more dangerous as to its results than the above, has taken hold of the minds of some persons who have indeed become informed as to the chemical difference just noted, but have somehow been led to consider these two substances, thalline and thallium, as having identical therapeutic properties. This second error—the offspring of the one above exposed—is still held by a number of pharmacists and others, who have been disabused of the former misapprehension but have substituted this one in its stead.

Such error has even been induced or supported by the editorial inadvertence of professional journals of high standing, as the following instance proves:

The researches made by Kreis on the therapeutic properties of thalline were correctly reproduced in the *Medical Record*, of London; but were thence copied into *Nouveaux Remèdes* (1888, p. 42) under the mischievously misleading title of "Effets des sels de thallium sur les gonococcus."—*Merck's Bulletin*, May, 1889.

Abdominal Compression in the Treatment of Dyspepsia.—WETTENDORFER, in the *Deutsche med. Wochenschrift*, speaks highly of the treatment of dyspepsia, flatulency, torpid digestion, etc., by the application of abdominal compression, in the shape of an elastic bandage about twelve inches wide. Wettendorfer struck upon the plan merely by accident. While treating a patient for chronic eczema of the trunk with a Martin's rubber bandage, he observed a rapid and complete disappearance of all symptoms of indigestion, from which the patient had been a great sufferer. Since then the treatment has been used in a large number of cases of dyspepsia and flatulency with great success.

Another Elixir of Youth.—It is stated by a Pesth newspaper that DR. SZIKSZAY, a Hungarian physician, has been making experiments in the State Prison at Engelsfeld by injecting a liquid, the composition of which is not revealed, into aged persons. The results are said to be remarkable. The strength of the "subjects" was tested with a dynamometer before and after the injections. In the case of a man aged seventy-five, the strength was found to be increased after the seventh injection from 14 to 19 kilogrammes, and after the thirteenth to 35 kilogrammes. Experiments on men and women of different ages showed, as might be expected, marked individual differences.—*The British Medical Journal*, September 14, 1889.

Glycerine Tampons in Ozæna.—At a recent meeting of the Society of Military Surgeons in Vienna, DR. SIDLO strongly recommended the treatment of ozæna with glycerine. His method consists in daily washing out the nasal cavity with a two per cent. solution of chloride of potassium, to which ten per cent. of glycerine has been added. This is followed up with the insertion of rolls of cotton soaked with a mixture of one part of glycerine and three parts of water, the tampons being allowed to remain in place for an hour at a time. Dr. Sidlo claims good success in the management of ozæna by using this method, which requires some weeks to effect a cure.—*The Medical Chronicle*, September, 1889.

Local Treatment of Laryngeal Phthisis.—PROFESSOR S. KRAUSE has lately published an article in the *Therap. Monatschrift*, in which he pleads for an extended employment of local methods of treatment of laryngeal phthisis. The method most in favor by him is that of first scraping the diseased portion by the curette, and afterward applying lactic acid. He curettes out not only the ulcerations and granulations in order to obtain a sound base, but also excises portions from the infected tissues to make them more accessible to the lactic acid. In this way he has treated 71 cases, 43 of which have been discharged cured and freed from trouble. Of these, 23 are still living, 7 are dead—but none in consequence of the laryngeal tuberculosis, 8 have withdrawn from treatment, and 12 are still under it.—*Med. Press and Circular*, September 11, 1889.

The Bacilli of Alopecia —DR. SAYMONNE, says the *Medical Record* of September 28th, claims to have isolated a bacillus, called by him "bacillus crinivorax," which is the cause of alopecia. It is, he says, found only on the scalp of man, other hirsute parts of the body and also the fur of animals being free from it. The bacilli invade the hair follicles and make the hair very brittle, so that they break off to the skin. Then the roots themselves are attacked. If the microbes can be destroyed early in the disease, the vitality of the hairs may be preserved, but after the follicles are invaded and all their structures injured the baldness is incurable. The following is Dr. Saymonne's remedy to prevent baldness: Ten parts crude cod-liver oil, ten parts of the expressed juice of onions, and five parts of mucilage or the yolk of an egg, are thoroughly shaken together and the mixture applied to the scalp, and well rubbed in, once a week. This, he asserts, will certainly bring back the hair if the roots are not already destroyed, but the application of the remedy must be very distressing to the patient's friends and neighbors.

Idiopathic Enlargement of the Heart.—Science, from time to time, halts for a moment in her onward career to review past work, in order to substantiate and purify her labors and free them from useless theories and unfruitful hypotheses. Then, relieved from unnecessary incumbrances she is again able to step forward with increased vigor and energy.

In the various branches of internal medicine the value of such a review and correction of past work is most ably shown by Dr. O. Fraentzel in his lectures on diseases of the heart. His first lecture, referred to in the *Deutsche med. Wochenschr.* of September 5th, deals exclusively with idiopathic cardiac enlargements, under which head he includes all enlargements of the heart which are not dependent upon valvular failure.

The term "enlargement" is capable of two different meanings; on the one hand it may refer to a hypertrophy of the cardiac muscles, or on the other hand the enlargement may be due to a dilatation of the heart cavities. These conditions are not only anatomically different, but have also a different clinical meaning, and different symptomatology, and the line between them must be drawn clearly. Idiopathic enlargements of the heart may be divided into three groups: first, abnormal obstructions in the arterial system (aorta or pulmonary) may cause hypertrophy or dilatation of the otherwise normal heart; second, enlargements due to disease of the cardiac muscle; and third, those due to a primary affection of the cardiac nervous system. Abnormal obstructions in the pulmonary circulation may arise from various lung troubles. Of greater practical and theoretical interest, however, are the abnormal obstructions of the aorta, which cause increased pressure of blood. Cardiac enlargement may also be directly dependent upon renal diseases, chronic contraction of the kidney being a well-known factor, as well as parenchymatous nephritis and pyelonephritis. Until quite recently great weight was placed upon the influence of arterial sclerosis upon cardiac enlargement, but autopsies frequently failed to reveal any sclerosis, and often, also, sclerosis was found where no enlargement existed. Fraentzel says neither is dependent upon the other, although both may be traced to the same causes, viz., over-indulgence in eating and also overwork, bodily.

The cases are few where enlargement of the aortic system with simultaneous decrease of vascular elasticity causes enlargement of the heart.

Regarding fatty heart, Fraentzel is of the opinion that it cannot be regarded in the light of a separate disease, since many autopsies have proved the existence of a fatty heart in cases where any symptoms indicating such a condition had been clinically absent. Molecular changes of the cardiac muscle, however, result from several infectious diseases and a weakness of the muscle frequently permanently remains. A like weakness of the cardiac muscle may be occasioned by long confinement in bed, especially in old persons; also by excesses with Bacchus and Venus. Adhesion of the pericardium can only give rise to enlargement when accompanied by myocarditis. Of true affections of the cardiac nervous system little is known. Probably Basedow's disease, cardiac affections due to the misuse of tobacco, and paroxysmal tachycardia belong to this group. Brachycardia, Fraentzel considers not due to a nervous origin, but to a sclerosis of the coronary arteries with subsequent injury to the heart muscle.

Iodoform in Malignant Pustule.—Dr. E. Rinonapoli (*Bolletino della R. Acad. Med.-Ch. di Napoli*, No. 3, 1889) gives particulars of several cases of malignant pustule treated by the subcutaneous injection of a solution of iodoform in ether. Dr. Rinonapoli began this method in 1886, some thirteen months before Senger's work on the antiparasitic action of iodoform appeared. The method employed is that of several injections into and around the seat of the pustule of a ten per cent. solution of iodoform in ether. The pain attending the injections is of severe burning character, but soon passes off. The beneficial effects are rapid in appearance. In three or four hours after the injections, even in advanced cases, the fever lessens, the swelling around the pustule disappears, the tongue becomes clean, and the patient is able to sleep and to take food. The treatment appears to be of distinctly specific character, and to arrest at once the growth and multiplication of the charbon bacillus. If applied at the outset of the attack, the effect is said to be almost magical.—*The Lancet*, September 21, 1889.

Prophylactic Hair Tonic.—The *Bolletino farmaceutico* for September, 1889, gives the following hair tonic, which it claims will stimulate the hair, prevent alopecia and dandruff, as well as act as an agreeable dressing:

℞.—Carbolic acid . . .	2	parts.
Tincture of nux vomica .	8	"
Tincture of red cinchona .	30	"
Tincture of cantharides .	2	"
Eau de Cologne . . .	120	"
Cocoa oil	120	" —M.

The tonic should be applied to the hair daily, with the aid of a small sponge.

Massage as a Therapeutic Agent.—At the last meeting of the British Medical Association (*British Med. Journal*, September 21) the subject of the therapeutic value of massage in nervous ailments was brought up for discussion:

Dr. G. H. Savage said that of late there had been too great a tendency to treat all cases of neurosis by massage. This treatment was not only of no use, but was really harmful in some such cases. It might be taken for granted that it was rarely if ever useful in ordinary cases of insanity; in cases of emotional self-consciousness it was bad, both the solitude and the bed being contraindicated. In hypochondriacal states it was generally harmful, and in most cases of active melancholia it was not useful. He had hardly ever seen it do good in cases in which, with the emotional depression, there were well-marked delusions, such as those of unworthiness or ruin. Its chief use was in those cases in which the mental depression was associated with physical weakness, loss of flesh, and deficient action of the gastro-intestinal tract. In such cases bed and feeding did well enough, as a rule, but in some massage acted more rapidly. For such cases the massage treatment should differ somewhat from that in use ordinarily. He preferred an ordinary medical nurse, lady if possible, to take the whole charge of the case. The masseur should be looked upon as an important aid, but not as the chief person or means of treatment; the massage should be associated with cheerful companionship and some occupation however simple. The massage should be continued as long as the general

health was feeble, and as long as the appetite was bad. The object was like putting salt in the food given by the stomach-tube to create a desire for food, and then to supply it in a suitable form and quantity. He related a specially interesting case of melancholia cured after four years of profound depression.

DR. WARNER had employed massage in many cases of chorea, with low nutrition and loss of body weight, in conjunction with forced over-feeding and rest in bed; the results had encouraged him rather to trust to rest and feeding than to massage.

DR. NEEDHAM had employed massage in some cases of melancholia, and in two or three had seen excellent results from it. Its chief value in these cases seemed to be due to its influence in stimulating the muscular apparatus in the circulation, and so supplementing active exercise, improving digestion, and relieving constipation.

DR. WILBERFORCE made some remarks on the need for distinguishing with more precision than had usually been adopted the cases for which massage was appropriate, especially in nervous cases as distinguished from voluntary muscular exercise.

DR. PERCY SMITH referred to three cases in Bethlem Hospital, in two of which the treatment was quite unsuccessful in curing the mental disease, though there was great physical improvement. They were both cases of stupor, and in one the effect of the physical improvement appeared to be that the depression passed into excitement, another a case of melancholia with malnutrition.

THE PRESIDENT said he had been disappointed with the results of massage in what appeared likely cases for its employment; in others, however, it had been of use. It improved the appetite often when the mental symptoms were not much ameliorated. Massage, like hypnotism, had suffered from quacks, and if care was not taken it would get into bad odor, and whatever use there was to be obtained from it would be lost sight of.

Arsenical Paralysis.—DR. R. KREHL, in the *Deutsch. Archiv. für klin. Med.*, describes the following case of arsenical paralysis: A man, twenty-three years of age, who had always enjoyed good health, was affected with a skin eruption, for which he used an ointment containing arsenic. At first the dose was small, equal to two drops of Fowler's solution, three times a day; afterward the dose was increased. In about four months after commencing the arsenical treatment, the patient suddenly felt tingling and trembling in the hands and feet, with shivering over the whole body. He could not stand, and felt dizzy; there was great pain in the calves of the legs and excessive feeling of depression. During the whole of this time the use of arsenic was continued, the entire amount used being calculated as equal to about twenty grains of solid arsenious acid. At this period the case came under the observation of Dr. Krehl, who found the condition as follows: Much emaciation of the whole body, but especially of the extremities; no fever, weakness in the limbs, and pains in the calves of the legs. The skin over the whole body was dark brown and very dry. There was slight horizontal nystagmus, some appearance of flashes of light, but otherwise the eyes were normal. The internal organs were normal; the muscles of the trunk responded to both currents, and the sensibility of the trunk was unimpaired. The arms were much atrophied, especially the forearms—the thenar, hypothenar, and interossei suffering most. The voluntary movements of the arm were feebly accomplished, the extensor muscles being weaker than the flexors. The fingers were almost entirely paralyzed. Tendon reflexes diminished. Tingling and numbness in both hands. Feeling of touch and localization unaffected, also the perception of painful impressions. In the legs the condition was very similar. In hands, forearms, and thighs, there was partial reaction of degeneration, below the knee it was complete. With the eyes closed the patient could not recognize the position of fingers or toes. If passive movement of the fingers was made, he was aware that a change of position had taken place, but could not describe it. He could distinguish by feel, between smooth and rough objects, but could not determine their shape. The position of head and trunk was recognized without difficulty. The perception of weight was impaired. Four months after, the general condition of the patient was much better; he could stand, but the peronei muscles remained paralyzed. The peroneal and tibial nerve on both sides did not respond to electrical stimulus.

Arsenical paralysis is characterized by very speedy atrophy of the affected muscles, which is often perceptible within a fortnight after the commencement of the first symptoms. In severe forms the atrophy is degenerative, as is proved by the electrical reactions. Sometimes the electrical reactions are merely diminished, the atrophy in such cases being simple atrophy. In the case above reported both kinds of atrophy were present. The tendon reflexes are always absent in severe cases; the skin reflexes demand more careful investigation. In all cases of arsenical disorders of the nervous system there is considerable disturbance of the sensory nerves, even when motor symptoms are absent.—*Medical Chronicle*, September, 1889.

The Use of Pessaries.—In these days, when gynecology has contributed so much to the therapy of uterine displacements, the once vaunted efficacy of pessaries seems to be decidedly on the wane.

DR. J. B. W. NOWLIN, of Nashville, Tenn., sums up the principal objections to the use of pessaries, in the *Southern Practitioner*, for September, 1889, in the following terms:

1. They can only act as palliatives. If too small, they are expelled or cannot sustain the womb, and if too large they exert injurious pressure.

2. They keep up a continual irritation in the vagina, acting as a foreign substance, producing mucous, purulent, and leucorrhœal discharges, thus laying the foundation for fungous or cancerous diseases.

3. Many forms of these instruments are liable to produce septic results.

4. They produce undue and permanent dilatation of the vaginal walls by destroying the tonicity of the parts.

5. If not frequently removed, they become filthy and irritating.

6. They are liable to cause irritation of the bladder and constipation.

7. Their application is often left to the laity.

8. By the obstruction which they offer to the circulation, they produce engorgement, and it may be ulceration of the surrounding parts, extending even to the production of a vesico-vaginal or rectal fistula.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, OCTOBER 5, 1889.

TONSILLITIS.

THE discussion on tonsillitis, its varieties and relations to rheumatism, in the Section on Laryngology, at the recent meeting of the British Medical Association, emphasizes, aside from its intrinsic importance, two facts which during recent years have urged themselves with increasing insistence upon the attention of the profession. These are, first, the advantage of the formal discussion of vexed questions in open meeting by members of the profession qualified by experience and special study; and, second, the fact that the force of the revolution in medicine wrought by the science of bacteriology is exerting itself not alone in the domain of pathology and therapeutics, but that it is steadily and progressively compelling a rearrangement of our established views of diseases in their clinical relations, and corresponding modifications of nosological lines.

Clearer notions of the nature of infection have done away to a large extent with the boundary lines between simple and specific inflammations, and are not only step by step increasing the category of constitutional maladies at the expense of local diseases, but are also bringing into light relations and analogies formerly wholly unsuspected.

The discussion referred to, *British Medical Journal*, September 14, 1889, in which Haig-Brown, Archibald E. Garrod, R. Hingston Fox, Lennox Browne, and others took part, was inconclusive as regards the etiology of tonsillitis. It perhaps served a useful purpose in indicating the obscurity in which the cause of this disease is still enveloped, thus pointing out a promising field for future work. It is of importance as marking the termination of that period in the history of clinical medicine in which tonsillitis has been regarded as a local affection, an event foreshadowed in the writings of Ball, Lasègue, Lennox Browne, and others, and already for some little time regarded as overdue by observant practitioners far and wide.

Henceforth follicular or lacunar tonsillitis will be regarded as an acute infectious disease, and in this sense will naturally fall into the group of the fevers, a position sustained by the sudden onset, marked constitutional disturbance, high fever, critical fall of temperature irrespective of the action of drugs, the occurrence of local epidemics, and the spread by contagion, which are established phenomena of the disease. The frequent association of tonsillitis with rheumatism rather helps than impairs this analogy with the specific fevers, seeing that scarlatina and enteric fever, though usually uncomplicated by rheumatism, occasionally present acute arthritic manifestations precisely similar to those met with in tonsillitis. What the essential relationship between the form of tonsillitis under consideration and rheumatic fever may be, has not as yet been satisfactorily established. The frequency of the association is remarkable, and has been observed by all writers upon the subject in recent years. In one hundred and twenty-seven cases studied by Dr. Haig-Brown in the Charter House School, *Tonsillitis in Adolescents*, 1886, seventy-six gave a history of rheumatism. In forty-three cases observed by Boucsein, *American Journal of the Medical Sciences*, October, 1889, nineteen revealed a history of rheumatism, six personal, and the rest in members of the immediate family.

Whether, as suggested by Lennox Browne, the rheumatic or gouty diathesis, or some combination of the two, is an underlying factor of importance in the majority of patients subject to recurrent tonsillitis or not, remains to be determined. Our own experience is decidedly against this view, which is not, as was at one time thought, sustained by the usefulness of the salicylates in the treatment of the disease; these remedies having been found useful rather on account of their sedative properties than by reason of any great influence upon the course of the disease. Nor does the occasional occurrence of endocarditis in the course of tonsillitis establish the identity of the latter disease with rheumatism, since

implication of the serous membranes of the heart is of occasional occurrence in several of the acute infections. The weight of opinion among those engaged in the discussion seems, however, to have been in favor of the view that tonsillitis is, in a majority of cases, of rheumatic origin.

The form of tonsillitis referred to, is that called follicular, the familiar characters of which require no special description. It would appear from the drift of the discussion that true quinsy, or suppurative tonsillitis, is regarded in England as an essentially different affection. This view does not appear to us to be sustained by the facts. On the contrary, we hold that the boundary line between these affections is not in all cases absolute.

HOSPITALS OF THE ORIENT.

THERE has been a news item that has thoroughly gone the rounds of medical journals, to the effect that the Empress of Japan has contributed during the last year $7,500 out of her "pin-money," to assist the Tōkyō Female Hospital in its good work. The scant knowledge possessed by the profession in this country in regard to the nature of hospitals in the Orient, makes this brief item a suggestive one.

In China hospital work presents grave difficulties, cleanliness being almost impossible. The Chinese patient loathes mattresses, nay, frequently refuses to sleep on them, but clings lovingly to the luxury of a piece of matting thrown across boards, and a wooden, earthenware, or pig-skin pillow. They often insist upon bringing their own bedding, which consists of a few wadded quilts of great age, and, as a rule, alive with vermin. Washing has to be enforced, and many adult patients, incredible though it may seem, take their first bath, as far as they can remember, after entering the hospital. That, with such hygienic surroundings, grave operations—such as laparotomies, resections, lithotomies, etc.—can be performed, and result successfully, seems truly marvellous. Under such difficulties does DR. KERR, the well-known medical missionary of Canton, labor. Yet he has performed nearly 500 successful operations for calculus.

The hospital of Dr. Manson, at Amoy, whose name is associated with the discovery of the intermediary host of the filaria sanguinis hominis, is of a slightly better type, and a crude method of asepsis is enforced, yet the same difficulties are also met with by him. In Japan, however, an entirely different state of affairs exists. The Japanese are a preëminently cleanly nation. In the larger cities the principal hospitals are supplied with comfortable beds and foreign bedding—*i. e.*, sheets and blankets. In the Japanese hospitals proper, however, the beds are made upon the floor, and the covering consists of one or more soft *futons* or quilts. The floor is covered with white mats nearly two inches thick, and made of fine rice-straw; the doors are of paper, and in winter great charcoal braziers supply insufficient heat. The nurses are mostly old women, good at heart, but poor in practice. The physician, in order to make physical examination, must, of necessity, kneel on the floor by his patient's side. The Japanese have a profound respect for physical examination, and the average countryman is firmly of opinion that a physician can diagnosticate the most obscure case by a glance at the tongue or a touch of the pulse. A curious idea also exists that the one pulse differs from the other, and both wrists are always gravely offered to the physician. The physicians of the old Chinese school, who were never allowed to enter the presence of a lady in *dêshabillé*, had to content themselves with sitting outside the patient's room and "feeling" a string, the other end of which was tied around the patient's wrist.

Although there are excellent hospitals throughout Japan, the establishment of hospitals for women exclusively has been neglected, until the Tōkyō Woman's Hospital was founded. This institution is one which would be a credit to any country. Connected with it is a most ably conducted training school for nurses, that is now sending competent trained nurses all over the country.

The Empress is indeed doing a good work with her "pin-money," and when we consider that the value of money in Japan is double what it is here, the donation is by no means small. The Empress is noted for her charities and for the personal interest she takes in the advance of medical science in her country. She is also the President of the International Red Cross Association of Japan, and an active worker for the cause.

A WOLF IN SHEEP'S CLOTHING.

THE old fable, having the title given above, seems once more to have found an application in real life.

In another portion of this issue of THE NEWS we give *verbatim* two letters received by ladies in this city from a well-known firm of opticians, which, for impertinence, would be hard to surpass. It is bad enough for the profession nowadays to be surrounded

by a vast throng of patent medicine venders who daily, by their advertisements, take from the hard-working doctor the pittance which he deserves, without having a firm who, heretofore, have had one of the largest trades in the manufacture of prescription glasses, sending broadcast such invitations to the laity to come and be benefited by the skill which they claim to have become possessed of, rather than by the medical learning and scientific resources of the trained physician. We much regret to see the practice of any department of medicine attempted by those possessing no claims other than a spirit of trade, and we trust that their estimate of human gullibility may prove incorrect.

Probably the greatest risk in this over-the-counter prescribing by opticians is the fact that many people, thinking failing sight due to optical errors, are given all manner of useless glasses, when the fault may be changes of the choroid, retina, optic nerve, or crystalline lens. Within the past three months, we have been informed of three cases who were given glasses by this optical company, in one of whom there was beginning cataract, with much gray degeneration of the optic nerve, due probably to spinal trouble; in another albuminuric retinitis; and in the third, chronic glaucoma in which the central vision was still good, but the field of vision greatly contracted and operative interference urgently demanded.

It is time that the profession should let those persons with whom they are accustomed to deal, or to whom they are accustomed to recommend their patients, understand, so far as the medical branch of their business is concerned, that dignity and honor require them to extend their trade only by giving such skilful mechanical satisfaction to their customers as to make the large body of persons who are so unfortunate to have to wear glasses, look to them for assistance after having consulted a regular physician.

REVIEWS.

Syphilis of the Nervous System. By H. C. Wood, M.D., LL.D. 12mo., pp. 135. Detroit: George L. Davis, 1889.

This book is one which forms part of the series of the Physician's Leisure Library for 1889, and it is above the average standing of its peers. Dr. Wood, while drawing attention, in his preface, to the experience reached by him in a large practice, nevertheless has looked into the contemporaneous literature of the subject to a very great extent, and the book teems with references to the writings of others.

The extreme frequency of "nervous syphilis" is so well known that any words are useless in this respect, and yet we doubt whether many physicians are not in ignorance as to the wayward manifestations of a disease whose presence may be all unlooked for or denied. Dr. Wood has put all the practical points for diagnosis and treatment so clearly that one feels, after reading his brochure, as if he were well equipped to defy all such cases which may fall into his hands. To those who have heard the lectures of the author on this subject, the book at hand will act as a valuable remembrancer, while to those who have not been so fortunate it will prove, we think, a help and in daily practice a useful guide.

Lectures on Obstetric Nursing. By Theophilus Parvin, M.D. 12mo., pp. 104. Philadelphia: P. Blakiston & Co., 1889.

No one who has had the pleasure of listening to one of Dr. Parvin's learned and able lectures can fail to mark that he has carried even to nurses the tales of the early days of medicine and learning in which he delights to revel. The little book of one hundred and odd pages, as it lies before us, teems with matter touching upon the staid subject of obstetric nursing in a way that turns its somewhat sombre edges with a glow of interest, and makes one read it not only to gain the knowledge of the subject in hand, but for its constant quotation of historical fact or mythological fancy. While it has been held by some that all matter outside of the "core" of the subject is extraneous, we cannot help thinking that every one who teaches largely must have noticed that "seasoning" an intellectual meal has much the same effect as a similar treatment of ordinary food, and that the absorption of nutriment is in direct relation to the activity of the digestive function. Both doctor and nurse can read this brochure with advantage and with the ease that comes of ready assimilation. The nurses of the Philadelphia Training School have been favored by many opportunities of learning that in this, as in many other branches of medicine, even the most trying cases may be lightened if the proper means be found.

Transactions of the Thirty-ninth Annual Meeting of the Illinois State Medical Society. Chicago: Jameson & Morse, 1889.

These transactions comprise the usual amount of society business, address of the president, memorials and portraits of deceased members, and a number of papers in the form of reports of the chairmen of various committees.

Most of the reports are of interest and up to date in medical progress, though few show much originality. In the report of the Committee on Practice of Medicine, diphtheria is ably discussed and a well-timed blow is aimed at "those physicians who diagnose all forms of tonsillitis and pharyngitis with deposits as diphtheria, and tell us they have treated hundreds of cases with some particular formula without a failure." We fear such physicians are far from rare and have led many astray in the treatment of this disease. Kerosene oil is lauded as the best local application, quinine, iron, and chlorate of potash the best internal medicaments.

Much of the report on Obstetrics is devoted to the use of antiseptics in midwifery, which are rightly considered

of as much importance in this department as in general surgery.

On Diseases of Children the report is unsatisfactory, being largely devoted to a vain attempt at proving the causation of "summer complaints" to be extreme heat acting upon the sympathetic nervous system. No consideration is given to the effects of heat upon food, and in treatment sterilization of milk is ignored.

The binding, printing, and portraits are good, and as a whole the volume is a credit to the Society.

SOCIETY PROCEEDINGS.

AMERICAN GYNECOLOGICAL SOCIETY.

Fourteenth Annual Meeting held at the Institute of Technology, Boston, Mass., September 17, 18, 19, 1889.

TUESDAY, SEPTEMBER 17TH—MORNING SESSION.

THE Society was called to order by the PRESIDENT DR. H. P. C. WILSON, of Baltimore, and the Address of Welcome was delivered by DR. J. P. REYNOLDS, of Boston.

DR. H. J. GARRIGUES, of New York, read a paper upon the

USE AND ABUSE OF ANTISEPTIC INJECTIONS IN OBSTETRICAL PRACTICE.

When it is known that puerperal fever is due to infection the use of antiseptic injections is indicated, but this has sometimes been carried to extremes, as was illustrated in a St. Petersburg hospital by the constant use of uterine injections of a solution of chloride of lime after parturition. The other extreme is reached by those who discard injections after labor altogether.

At the Maternity Hospital at Blackwell's Island the mortality from 1875 to 1884 was four and seventeen-hundredths per cent. During the period from 1884 to 1888, in which the author's method of treatment has been observed at the same institution, there have been but two fatal cases, or a fraction of one per cent.

Vaginal injections before delivery were believed by the author to be useful, though objected to by many writers on the ground that they were dangerous because the lubricating mucus was removed, etc. In answer to the objections that the bacteria on the surface of the vaginal mucous membrane were harmless, it must be remembered that they would not be harmless should they penetrate the subjacent tissues. They would also be an element of danger when carried from the vagina into the womb. If vaginal injections were used prior to labor, the vagina would be dilated and the microbes removed or destroyed.

Preliminary disinfections of the vagina are useful. If frequent examinations are required during labor, vaginal injections should be made once in three hours, and during the intervals a pad of absorbent cotton should be placed over the vulva. Injections after normal labor are not indicated, and there is no danger of infection if the labor has been antiseptic. If the labor has been abnormal, vaginal or uterine injections will be required *pro re nata*. If the lochial discharge is fetid, intra-uterine injections are usually required, likewise for the removal of débris in cases in which there has been sloughing and in cases in which the fœtus is macerated. Should peritonitis occur, the intrauterine douche should at once be given, likewise after abortion, the uterine contents having first been removed.

Solutions of bichloride of mercury should be used for these injections, but must be employed with care. Since 1884, twenty-two fatal cases following the use of these injections have been reported, but this loss is small in comparison with the benefits which have been obtained. Of these twenty-two cases, four should be left out, and in most of the others the solutions were too strong, or too frequently administered, or were improper in some other way. The strength of the mercurial solution should not exceed 1 : 5000, and it should be stopped as soon as toxic symptoms appear. Contraindications to injections are anæmia, kidney disease, and diarrhœa. The use of carbolic acid as an injection is objectionable because it benumbs the hands of the accoucheur, and sometimes affects the entire nervous system of the patient. Hydronaphthol is objectionable because it is a proprietary preparation and also because it has low germicidal powers. Creolin is highly approved by the author, as it makes the surface of the mucous membrane slippery; it is also a powerful hæmostatic. It is objectionable because, being used as an emulsion, it may obscure objects with which it is brought in contact. Its odor is pleasant, and used in a two per cent. solution it is, in the author's opinion, the best means which we now have for intrauterine injections. If vaginal injections alone are to be used, a six-inch glass tube is preferable for introreduction into the vagina; and if uterine injections are required, a single tube is preferable to a double one. Great care is necessary to avoid injecting the fluid into the Fallopian tubes. In hospital practice the author uses a glass intrauterine tube, but in private practice prefers an English catheter. The injections should be given with the patient lying upon the back, upon a bedpan, or upon a rubber sheet so folded as to carry off the fluid. The tube is to be guided into the uterus with the fingers and carefully carried to the fundus. If resistance is met, the tube should be withdrawn and reintroduced. Failure to observe these details has resulted in perforation of the uterus and injection of the bichloride solution into the peritoneal cavity. The temperature of the uterine douche should be from 110° to 115° F., the quantity from two to three pints. For a vaginal injection two to three quarts may be used. The return fluid should be examined, then the womb should be compressed, and all fluid should be removed from the vagina. Injections are generally very beneficial.

DR. W. T. LUSK, of New York, agreed entirely with the fundamental principle which related to the prophylactic value of uterine injections. Injections are used most successfully in those cases in which there is putrid infection from débris, blood-clot, etc. In pure septicæmia from round bacteria, injections are of no use and may be harmful after the microbes have passed into the lymphatic circulation. One thorough irrigation followed by the introduction of an iodoform pencil into the vagina is all that will be necessary in most cases. If injections are made as often as once in three hours, they will be very likely to produce harm. The statement that one would depend upon the odor of the discharge, as a guide in giving injections, is erroneous, for the most offensive discharges may be caused by simple puerperal,

catarrhal endometritis. In New York City practice puerperal fever is not infrequently associated with typhoid fever, especially in cases connected with defective sanitation. The method of Doléris of curetting, ecuvillonage, and subsequent irrigation, is very useful for many cases of puerperal fever.

Dr. H. C. Coe, of New York, had followed the method advocated by Dr. Garrigues with success. He believed it a very difficult matter to decide just when uterine douches are indicated and when contraindicated, especially in cases in which septic elements have passed the uterus and gone into the tubes. He was favorably impressed with creolin, but had also found that it masked the offensive odor of the discharges. As had already been said, prophylaxis is the most important consideration.

Dr. W. M. Polk, of New York, uses prophylactic injections, but in a somewhat different manner from that described by the author. He first washes the genitals inside and out with potash soap and hot water, and then uses the 1:5000 solution of bichloride of mercury. If there is suppuration in the cavity of the uterus, it should be treated like suppuration in any other cavity. The patient should be placed on her side and the vagina and uterus swabbed out with cotton, or the curette should be used, being followed by the creolin or bichloride injection. Gauze should then be placed in the uterus for drainage purposes. It is not usually necessary to repeat a douche or, at any rate, not sooner than twenty-four to forty-eight hours.

Dr. P. F. Mundé, of New York, believed it necessary first to ascertain the absolute cause of sepsis—that is, the interior of the uterus should be examined with the finger, in case of chill or high temperature, before irrigation is used. The curette should be used in case anything is found which requires removal, and after this the uterus should be irrigated. Subsequently ergot or an ice-bag should be employed, also the antiseptic pad. One cannot in all cases be guided by the odor, nor even by the finger; for there are cases in which the bacteria have gone beyond the reach of injections, and the patients will die. A chill may follow irrigation with a temperature of 104° to 105° F. Intrauterine injections after a normal confinement are entirely uncalled for. If a puerperal woman becomes septic, as Dr. Lusk has said, it must be through the fault of her physician.

Dr. H. J. Boldt, of New York, showed a modification of the Bozeman-Fritsch double catheter, but admitted that it could only be cleansed by boiling, and this should always be done before it was used.

Dr. A. P. Dudley, of New York, thought there were cases of puerperal fever which were due to infection from single pyosalpinx, and in which the womb became infected after labor had transpired.

Dr. Howard Kelly, of Philadelphia, believed that the vagina should always be washed out when there was any reason for suspecting infection. In tenement-house practice with unhealthy surroundings he had derived much benefit from the use of the obstetric pad, devised by himself, by which means the return fluid from the uterus and vagina was readily carried off.

Dr. E. C. Gehrung, of St. Louis, thought that septicæmia might be developed by uterine injections; débris being sometimes propelled further into the uterus by the current. Suction or aspiration was better than propulsion. A double canula should be filled, carefully introduced to the fundus, and then the stream of water allowed to flow out.

Dr. W. G. Wylie, of New York, believed that in many cases of puerperal fever the source of trouble was in the pelvis, and could not be reached by means of injections. He had been one of the earliest advocates of intrauterine injections, and was in favor of giving them every hour if they were required at all. The proper treatment in cases in which the trouble was located in the broad ligament, was to make an opening through the vagina, remove the septic matter, and drain. Many such cases which are not operated upon develop into general peritonitis, but even such cases may be operated upon successfully.

Dr. Garrigues, in closing the discussion, warned against depending solely upon the temperature as a guide in uterine irrigation. He approved of the use of soap and water, as advised by Dr. Polk, as it was not improbable that infection might take place through the air. He did not believe that a drainage tube or gauze was required, as the natural conditions of the uterus would favor drainage. Irrigation was not usually followed by a chill, but should not be repeated if a chill occur. Laparotomy would seldom be required, and the patients or their friends would rarely consent to it. With regard to frequent uterine irrigations, he thought that as good results could be obtained by the use of powerful vaginal suppositories.

Dr. John Byrne, of Brooklyn, N. Y., read a paper entitled

A DIGEST OF TWENTY YEARS OF TREATMENT OF CANCER OF THE UTERUS BY THE GALVANO-CAUTERY.

The author's paper was composed of facts in connection with his personal experience. The author's first series of publications, which included twenty-four cases of cancer of the uterus, appeared in 1872. In this he tried to demonstrate that the galvano-cautery was a most useful agent in the treatment of uterine cancer, also that it was less dangerous than any form of surgical treatment. He believed that it was a fact that in all cases of malignant disease of the uterus in which there was either induration or ulceration, the operation should extend far beyond the apparent seat of the disease. Prior to 1872 he thought there were few who used and believed in the galvano-cautery. This was partly due to the great difficulty in obtaining suitable apparatus, and there were few beside Jacobi, Noeggerath, and himself who experimented long enough to enable them to overcome the obstacles in this direction. He had finally succeeded in making the battery which he had used for the last fifteen years, which was of high potential, and had been used by him for all uterine operations in which the cautery was indicated. He believed the Paquelin cautery was a much inferior agent on account of the great radiation of heat from it. Whatever instruments were used, cauterization of all parts that were diseased was believed to be superior to any other means. Chloride of zinc had been used as a cauterizing agent for many years and could be employed if the proper galvanic instruments were not attainable. The series of cases which he presented included 367 which had been seen during the past twenty years. Of this number, 121 were lost sight of in the course of one year after they had been operated upon, hence his records

were not complete with reference to recurrence. He divided his cases into four classes: of these there was disease of the portio vaginalis in 59, of the entire cervix in 81, of the corpus in 18, and of both cervix and corpus in 219. In the first class there had been freedom from relapse, from one to fifteen years, in 36, the average period of exemption being 8 years and 6 months. In the second class the average period of exemption in 35 was 5 years and 6 months. In the third class there was an average period of relief from pain, hemorrhage, and discharges for 2 years in 4 cases. In the fourth class 78 cases had been exempt for nearly three years. He believed that all palliative means of treatment of cancer were useful even though relief lasted but a short time. Should hemorrhage occur after such treatment it was usually less profuse, and pain was usually less severe. Great care and thoroughness were necessary in using the galvanocautery. The cautery should not be heated until the knife was fixed upon the tissues to be removed, and great pains should be taken to avoid cauterizing healthy vaginal tissue.

DR. A. REEVES JACKSON, of Chicago, eulogized the author's paper and considered its statements in striking contrast with most of the recent contributions to the surgery of uterine disease. The recent literature of this subject was almost entirely devoted to cutting operations upon the uterus and its adjacent organs. The reports of Pawlik and the author, in which the cautery had been used, showed results which were far more favorable than those in which these organs had been removed by the knife. In comparison with the cautery hysterectomy by the knife had a high death-rate, but as an offset, it has been said that those who recover were less likely to have recurrence. This statement was shown to be fallacious by reference to the latest German statistics.

DR. T. A. REAMY, of Cincinnati, O., thought that the reader of the paper was too sanguine in regard to possible results with the cautery, and referred to a paper of his own in which 22 out of 57 cases of cancer of the cervix which had been operated upon recovered; he did not think that a much larger percentage could have been cured even if the cautery had been used.

DR. BYRNE, in closing the discussion, said that it was impossible to find the limit of cancerous disease with accuracy in any given case, and that when all apparently diseased tissue had been removed by the scissors or knife it was undoubted that the cautery would destroy diseased elements which were beyond their reach. He objected to the term *cure* in any case, and had systematically substituted the term *relief* in its stead. Even after the longest respite the disease might reappear or occur in the ovaries or elsewhere. With regard to hysterectomy, he believed that the actual statistics were even worse than had been reported.

DR. H. C. COE, of New York, read a memorial of the late James B. Hunter, of New York.

AFTERNOON SESSION.

DR. P. F. MUNDÉ, of New York, read a paper entitled

THE NATURE AND TREATMENT OF UTERINE FIBROIDS.

There were many tumors of the uterus which did not require treatment. Of the several varieties of fibroid tumors, the subperitoneal did not usually excite hemorrhage, while the submucous and the intra-mural frequently did. In the subperitoneal variety, operative treatment would consist of the removal of the uterus or of the ovaries. Intra-mural tumors should be removed without removal of the uterus; and the same was true of the submucous variety. The object of long-continued treatment with ergot or electricity was to force the tumor downward, or to restrain hemorrhage. For the removal of sessile fibroid tumors near the fundus of the uterus, he believed it was better to perform laparotomy and remove the uterus, than to attempt to remove them through the undilated utero-vaginal canal. Hemorrhage caused by these tumors might be treated by the curette, or by vaginal electro-puncture. The latter, which was Apostoli's method, resulted in only temporary cessation of the growth of the tumor.

Oöphorectomy for these tumors in the 3 cases in which he had practised it, had been entirely satisfactory. Laparotomy for these growths had been performed by him six times; the pedicle being treated by the extra-peritoneal method, and 4 cases recovered. Tumors which were near the *os internum* could be removed *per vaginam*. Many of them required no treatment. Only a few subperitoneal tumors were benefited by electricity. Interstitial and submucous tumors could sometimes be removed by enucleation; the capsule being first split and traction being then exercised. Tumors which were not influenced by ergot, including large subperitoneal tumors, were sometimes cured symptomatically by oöphorectomy. Laparotomy was not indicated if the tumors caused no trouble. If the patient were near the menopause, an operation was not usually indicated.

DR. W. G. WYLIE, of New York, read a paper entitled

THE NATURE AND TREATMENT OF FIBROID TUMORS.

The growth of the tumors was usually slow. If pain, etc., were present, it was usually due to disease of the endometrium, or of the tubes and ovaries. Tumors which grew rapidly might require operation. In women, who had reached the age of forty or upward, small fibroids were not very significant, but they might delay the menopause. Pain and failing health about the time of the menopause might mean degeneration of the tumor, in which case hysterectomy might be necessary. Fibroids, like all organic matter, have periods of growth and decay. Their average age is two to eight years. If a tumor has ceased growing, and after a time begins to grow again, its removal may be required. In other cases there was cystic degeneration, or internal suppuration, or other septic conditions which indicated removal. If the lining membrane of the uterus alone is diseased, curetting may relieve existing hemorrhage for a year or more. Should this not be efficient, the tubes and ovaries should be removed; and if this were done thoroughly there would probably be no subsequent hemorrhage. The reader's death-rate from hysterectomy had now reached ten per cent., and he believed that it was susceptible of further diminution. For the past two years the reader had been experimenting with Apostoli's method of treatment, and he believed that Apostoli's claims were exaggerated. If it did no harm, it might take away the patient's last chance of hysterectomy by delay. Its effect, in the author's experience, had been variable; and, on the whole, had not been satisfactory. In women, in the childbearing age, strong currents of electricity

were objectionable; for, if they did not cause sepsis, they might result in stenosis and inability to bear children. A strong electric current might relieve hemorrhage from a fungous growth, but it was no better than the curette in this respect.

The author admitted that his opinion concerning the value of electricity was still provisional, on account of insufficient experience.

Dr. Reamy approved of the conservative tone of both of the papers which had been read. A recent statement of Martin was to the effect that in 205 cases in which he had removed fibroid tumors, there were signs of fatty or other degenerative changes in 70. This indicated that in many cases spontaneous recovery would occur. Ergot alone may suffice for a cure without electricity or the knife. He thought there was a prevailing disposition to give insufficient credit to Apostoli for work which he had done. The speaker believed tumors had been cured and had disappeared after electricity had been employed —in fact, he had seen such cases. He believed that curretting was less safe than electricity, and if stenosis of the uterine mucous membrane prevented childbearing, it could not do it more effectually than did removal of the tubes and ovaries. Oöphorectomy would, he believed, usually relieve hemorrhage, and he admitted that in the severest cases hysterectomy was required.

Dr. G. J. Engelmann, of St. Louis, stated that his results in the treatment of uterine fibroids by electricity had been bad, but in chronic inflammatory conditions with indurated masses his results had been excellent. In fibroids accompanied with too much bleeding, as well as in those with scanty menstruation, the symptoms were greatly relieved. Patients were usually made very comfortable by the electrical treatment, and that was a good result from so harmless a method. In some cases puncture and strong currents of electricity were inadvisable, as they might cause an increase in the size of the tumor. If the tumor was growing slowly, electricity in mild currents was urgently advocated.

Dr. J. R. Chadwick, of Boston, was entirely opposed to Apostoli's method. He had had 2 fatal cases from its use, and 2 others which were nearly so. In all his experiments he had followed Apostoli's directions as closely as possible. But it may be that sufficient time was not given in every case. In no instance was there an appreciable diminution in the size of the tumor, though hemorrhage ceased for three years in one case. One who claimed as much as Apostoli must expect the severest and most searching criticism.

Dr. Ely Van de Warker, of Syracuse, N. Y., believed that Apostoli's method had positive scientific value, and objected to such sweeping denunciations of it. He admitted that electrolysis might produce cystic degeneration in a fibroid mass or intensify such a process if it already existed. This was the unfavorable side of the question, but he had also seen results which were positively good; tumors becoming movable, smaller and less troublesome, and hemorrhage ceasing.

Dr. Howard A. Kelly thought we should not ignore the opinions of Keith, Wells, and other eminent men who had experimented with Apostoli's method and believed in it.

Dr. M. D. Mann, of Buffalo, thought that the question as to the value of electricity in these cases was still unsettled. He had used the intrauterine method in many cases, and in all of them the symptoms had been relieved.

Dr. P. F. Mundé, in closing, related three cases in which he had seen tumors disappear after vaginal galvano-puncture. He believed that Apostoli's method was good, but is over-estimated.

Dr. W. G. Wylie, in closing, repeated his statement that Apostoli claimed too much.

Wednesday, September 18th—Morning Session.

Dr. A. Reeves Jackson, of Chicago, Ill., read a paper entitled

A case of abdominal lipoma simulating ovarian tumor.

The case narrated by the reader of the paper had been diagnosticated as a case of ovarian tumor. Laparotomy was performed, and great masses of fat were found attached to the mesentery and posterior portion of the peritoneum. These masses could not safely be removed, and the abdomen was closed. The patient recovered, and had not been materially worse since the operation. The literature of this subject is very meagre. Péan had reported two cases, which were quoted in detail; one resulted fatally, the other recovered; in both cases a diagnosis of ovarian tumor had been made. A case had also been reported by Sir Spencer Wells, which was narrated. The result of the operation was fatal. Dr. Byford, of Chicago, had reported one case, the masses of fat being successfully removed. Dr. Homans, of Boston, had operated on two cases, both resulting fatally. In none of these cases had a correct diagnosis been made, and the results of operation had been bad in a majority of the cases. The reader of the paper, therefore, congratulated himself that he had desisted from attempts at removal of the offending body.

Dr. S. C. Gordon, of Portland, Me., had seen one case of fatty tumor of the abdomen in a male subject. He had been requested to operate, and, having made an abdominal incision, found the condition reported. The patient recovered from the operation, but died soon afterward.

Dr. E. C. Goodell, of Philadelphia, believed that such cases usually occurred in persons who had also large deposits of fat in the abdominal wall. He had seen one such case. A diagnosis of ovarian tumor had been made, with which he had not coincided. The tumor was a mere mass of fat attached mainly to the omentum. It was not considered removable. The patient died soon afterward.

Dr. E. C. Gehrung, of St. Louis, had seen one case. He had considered the case inoperable, but seven years subsequent to his seeing it the patient was still living. The tumor had grown to enormous dimensions, and caused the patient great suffering. An operation was eventually performed, but not by the speaker, and the tumor was found to be a vast mass of fat weighing sixty-eight pounds, the latter fact being determined at the autopsy, which was made a few days after the unsuccessful attempt at removal.

Dr. Fordyce Barker, of New York, had seen one case. It had been removed, but not by him, the patient dying on the third day after the operation.

Dr. H. C. Coe thought that the fatal termination in

the cases reported might be due to the fact that malignant elements were present in the growths.

DR. G. J. ENGELMANN doubted whether all the cases reported were cases of lipoma of the abdomen, to which the subject of the paper was limited.

The President, DR. H. P. C. WILSON, of Baltimore, then delivered

THE ANNUAL ADDRESS,

in which the history of the Society and its satisfactory work were dwelt upon. It also abounded in reminiscences, especially concerning the eminent men who had been connected with it in previous years and had passed away. He also suggested for discussion the question as to the propriety of laparotomy during or just before the menstrual period. Storer had stated, at the first meeting of the Society, that laparotomy would be followed by the best results when performed during the week after menstruation had ceased. The speaker believed, on the contrary, that it was better to operate during the uterine *flood* than during its *ebb*. He believed that at such a time the flow from the uterus was beneficial, and would tend to prevent inflammation. He had acted upon this opinion in several cases in which laparotomy had been performed, and had not had occasion to regret his action.

DR. GOODELL thought the question a very important one. He had operated during menstruation, and was willing at any time to perform ovariotomy during that period. He would not be willing, however, to perform hysterectomy at such a time, or remove a uterine fibroid.

DR. A. P. DUDLEY had observed, as all operators had done, that a flow of blood from the uterus almost always followed laparotomy after a few days, and this had suggested to his mind that a flow from the uterus at any time was not a contra-indication to laparotomy. He had operated several times during the past year while menstruation was in progress. He did not think any one should object to perform hysterectomy at such a time.

DR. R. BATTEY, of Rome, Ga., had performed the original case of Battey's operation while menstruation was in progress without bad result. We should expect metrostaxis in almost all cases within two or three days after performing laparotomy.

DR. KOLLOCK, of Cheraw, S. C., had operated twice during menstruation, and saw no contra-indication in its existence. He was glad to hear the principle advocated by the President.

DR. H. C. COE thought a distinction should be made as to those who were fit subjects for operation while menstruation was in progress. He did not believe it anvisable in women who were susceptible to attacks of pelvic inflammation.

DR. P. F. MUNDÉ had operated during menstruation, and had not observed that the hemorrhage of the operation was more profuse than at other times. He thought it a matter of indifference whether menstruation were present or not in deciding as to the propriety of laparotomy. Proper dressings should, of course, be applied to the vulva, and particular care exercised to prevent sepsis. He did not think it advisable to remove a myomatous uterus during menstruation.

DR. A. J. C. SKENE, of Brooklyn, N. Y., thought no deductions could be drawn from the experience narrated as to the propriety or impropriety of operating during menstruation. In general, it was not well to operate while any function was being performed. If a patient suffered from dysmenorrhœa he would be in favor of operating just before menstruation to economize her vital force.

DR. ELY VAN DE WARKER, of Syracuse, N. Y., read a paper entitled

AN EXPERIENCE WITH SLOUGHING INTRA-UTERINE FIBROIDS.

The paper was based upon four cases.

Case I.—A patient of great obesity, in which attempts at total removal were abandoned, the sloughing layers of the tumor being removed with the curette. Recovery, and death some years subsequently with symptoms of malignant disease of the uterus.

Case II.—Age of patient forty-six, one child, and frequent abortions. Extreme loss of blood, high temperature and œdema of the extremities. Cervix extremely resistant. Rapid dilatation and removal of sloughing fibroid. Recovery, and death a year afterward from chronic nephritis.

Case III.—Age of patient thirty, sterile, fibroid extended from uterus, pedicle low in the cervix, sloughing, hemorrhage and pyrexia. Operation and recovery.

Case IV.—Age of patient forty, three children. Rapid disappearance of pelvic tumor, attended with severe flooding from sloughing intra-uterine fibroid. Extreme high temperature and exhaustion. Operation and recovery complicated with hystero-tetanus without trismus. Neurotic symptoms were relieved by bromides and assa-fœtida.

Case V.—Age of patient fifty-one. Uterine symptoms for fourteen years, which had been ascribed to cancer. Loss of blood almost continuous during that period. Pyrexia for four weeks, exhaustion and anæmia. Operation, and death from shock.

The following summary is based upon the foregoing:

1. The use of the curette to remove the sloughing periphery of an intra-uterine fibroid when non-removable from any cause that renders extirpation extra hazardous is to be recommended.

2. The process of sloughing begins at the outer layers of the tumor, and extends layer by layer to its deeper structure.

3. Rapid dilatation of the cervical canal will afford ample space for the manipulation necessary for removal of a tumor. Sponge-tents and other slow methods of dilatation are unnecessary.

4. Intra-uterine fibroids, when extended and pendulous in the cavity of the cervix, the pedicle being in the cervix, rarely slough.

5. A form of hystero-tetanus, without trismus, may follow certain forms of blood-poisoning, or uterine lesion. In the author's experience this condition was seen only in connection with the puerperal state and was attended with septicæmia.

6. A blanched mucous membrane, with excessive and long-continued loss of blood, accompanying intra-uterine fibroids, indicates that the limits of safety have been reached in the operative treatment of sloughing fibroids, and a doubtful prognosis must be given.

7. Septicæmia, with long-continued pyrexia, is necessarily a fatal condition when due to a sloughing fibroid, unless relieved by the removal of the offending mass.

Complete or partial removal is a life-saving measure, and is comparatively easy and attended with but little danger, except in the cases in which the mucous membrane is blanched.

Dr. M. D. Mann narrated three fatal and one successful case of sloughing fibroid, all illustrative of the danger of the condition and the danger which may attend attempts at its relief.

Dr. Battey narrated several cases, in one of which removal of the ovaries was followed by sloughing of a fibroid tumor. The same result sometimes followed the use of ergot.

Dr. Kollock narrated a peculiar case in which a large sub-peritoneal fibroid tumor was removed. The uterus was also removed, and was found to contain a large collection of fibroids and a macerated fœtus.

Dr. Wylie advised that the sloughing mass be first made as nearly antiseptic as possible, prior to operation, by applications for several hours. After the operation no tampon should be used as it might prevent free drainage. It was a singular fact that intra-uterine tumors in old women, in atrophic conditions, sometimes presented symptoms similar to those which attend sloughing fibroids.

Dr. Goodell believed it better to do several operations for the removal of an intrauterine fibroid than to prolong one operation unduly. He had sometimes been able to deliver a troublesome tumor with a guarded obstetric crotchet,

Dr. Gordon narrated a case. He thought the cause of sloughing in the tumors under consideration was imperfect vascular and nerve supply.

Dr. Van de Warker, in concluding, believed there was a special mechanism which caused sloughing, namely, pressure and constriction, and the impaired vascular and nerve defects were secondary to this. He could not think that antiseptic applications prior to operation would be of much avail, as they would not penetrate deeply enough to affect the entire mass of sloughing tissue.

Dr. H. C. Coe, of New York, read a paper entitled

DEATH FROM VISCERAL LESIONS FOLLOWING OVARIOTOMY.

The great reduction in the death-rate which had attended the improved methods of ovariotomy was a noteworthy fact. In addition, the field of the operation and kindred operations had extended, and many conditions which had once been considered of fatal significance were now regarded as less serious. It was a matter for regret that post-mortem examinations following laparotomies were often performed so superficially that they revealed little concerning the causes of death. His paper was based upon fifty autopsies which had been made with great care and thoroughness.

His first class of fatal lesions were those which involved the heart. Of these, fatty degeneration, dilatation, and mitral diseases were noteworthy. Cardiac disease might not develop for several days after an operation, heart failure then occurring. The heart might also be injuriously affected by the pressure of a distended stomach or intestines notably in those cases in which opium was used. There might also be reflex irritation due to disturbance of the abdominal sympathetic plexus.

Pulmonary affections might be present at the time of operation and be overlooked, the condition not being recognized until after death. The dyspnœa prior to operation might be due to pleurisy rather than to pressure of a tumor. Pulmonary disease after operation might also be a reflex condition, and pulmonary œdema was often one of the final lesions before death. Bronchitis and pneumonia might follow prolonged exposure during an operation, or the prolonged dorsal position after operation. It was important to know whether the disease were intercurrent or preëxisting.

Renal affections were also frequently overlooked. Albuminuria frequently resulted from the pressure of a tumor, and pus in the urine might also be indicative of a renal lesion. A renal lesion did not necessarily contraindicate laparotomy. Complete suppression of the urine after laparotomy was rare, but it might occur with uræmic symptoms. Renal diseases which might occur *de novo* after operation were hydronephrosis, acute pyelitis, and interstitial nephritis. Diseases of the gastro-intestinal tract of an acute or chronic character might precede an operation or follow as its result. Gastric irritation was not necessarily due to pressure; it might be due to venous stasis; and such cases might be fatal from exhaustion following irremediable vomiting. Acute dilatation of the stomach might follow operation.

Gastro-intestinal inflammation of a severe character might follow laparotomy, and a diarrhœa not septic in character might quickly prove fatal. Peritoneal adhesions might also cause intestinal stricture with its serious resulting conditions. Peritonitis after laparotomy was much more common than was usually supposed, and this was frequently demonstrated by those who were called upon to perform several laparotomies upon women.

Other visceral lesions might affect the spleen, the lymphatics, the liver, etc. Sepsis was not the only thing to be avoided, as visceral lesions of an irremediable character might affect the prognosis. All of which taught that too great care could not be taken in examining patients prior to proposed operations. Routine methods were to be avoided, except in so far as they conduced to thoroughness of knowledge of the patient's fitness for an operation.

Dr. G. J. Engelmann, of St. Louis, Mo., read a paper entitled

RENAL DISEASE CAUSED BY DISEASE OF THE PELVIC VISCERA.

Renal disease might be caused by perverted nerve action, disease of the ureters, the pressure of pelvic tumors or of the gravid ureters. The influence of the nervous system in causing this disease was a very important one. Obstructive conditions of the kidneys might exist and yet no lesion be apparent. In connection with parturition, albuminuria might exist as the result of both reflex influence and pressure. Disease of the bladder, caused by the pressure of tumors, was usually detected. Pressure upon the ureters caused a series of morbid conditions, beginning with ureteritis and ending with contracted kidney. The progress of such disease was usually slow and insidious, the more prominent symptoms being backache and lumbar pain. Life was endangered as suppression of urine and coma supervened. The anatomical conditions of the ureter exposed it to pressure during its entire extent. Sometimes it was

pressed against the brim of the pelvis, at others it was involved in the exudate of an inflammation. The right was more exposed, and so more subject to these lesions than the left. Malignant disease of the pelvic organs was also a frequent source of disease of the ureters and kidneys, the condition not being discovered, perhaps, until an autopsy revealed it. It was somewhat singular that cardiac complications seldom occurred in these cases, even though the kidney might be in a condition of hydronephrosis. Ovarian tumors were less likely to be complicated with disease of the ureters and kidneys than were the hard and solid growths; the obvious reason being the yielding character of ovarian cysts, which caused them to develop where the resistance was least. A diagnosis was rarely made when compression of an ureter first occurred, the condition usually progressing to pyelitis before it was discovered; hence there was an indication for active interference as soon as symptoms of moderate intensity appeared. Prolapsus uteri with the traction which accompanied it might cause disease of the ureter and then of the kidney. Renal changes during pregnancy might be reflex, but were usually due to pressure upon the bladder and ureter. Flaischlen had compared the renal phenomena during pregnancy and labor to those which are present in cholera. The pain proceeding from the kidney disease might be obscured by that which proceeded from disease of the uterus or ovaries. It was often described as darting downward apparently along the course of the ureter. Patients frequently complained of vesical tenesmus, scanty and frequent urination, darting, spasmodic pains downward from the brim of the pelvis, and burning and lancinating pains in the back causing lassitude. In some cases the direction of the pain was toward the liver, in others, across the small of the back. As the disease progressed the pain would continue for hours, or even days, with little intermission. These phenomena sometimes appeared after a sudden fall, or a cold, or a sharp attack of cellulitis or cystitis, and should suppression occur, uræmia and œdema of the extremities might supervene. The urine contained pus, phosphates, hyaline, granular, and epithelial casts, and, in the later stages, it was of alkaline reaction. One kidney alone might be involved, complete occlusion existing. The prognosis was usually serious, because the cases were seen too late. If seen early, the condition might be relieved by removing the cause of pressure. This might consist in the removal of a tumor, or in the replacement of the uterus. Medicines were usually of little service, though benefit was sometimes experienced by the use of ergot. Other means which, however, were often inefficient, consisted in the use of heat, iodine, and the galvanic current. Catheterization of the ureter, or Bozeman's operation of kolpo-uretero-cystotomy by enlarging the lumen of the ureter, might give relief. It would also furnish a means of draining the kidney should pyelitis exist.

DR. W. M. POLK thought the papers of Dr. Coe and Dr. Engelmann demonstrated that in connection with pelvic disease there were other organs which called for careful attention. A class of women who were quite subject to coincident renal disease included many who were in the higher walks of life, who indulged freely in the dissipations of society life and the pleasures of the table. With such women ether anæsthesia and operative shock were prone to mar the efficiency of surgical operations. Intestinal complications were common in such cases, and excretion in general was interfered with or suspended.

DR. HOWARD A. KELLY would emphasize the importance of Dr. Engelmann's statements. Literature abounded with cases in which pelvic disease was complicated by renal disorders. The anatomical conditions of the kidney and ureters rendered such complications possible and probable. Such diseases as tuberculosis of the bladder, and cancer of bladder, uterus, and vagina, might extend from the ureter to the kidney; the ureter might also be seriously implicated by retro-peritoneal sarcoma, by adhesive bands in the pelvis, and by vesico-vaginal fistula. In the advanced stage of pregnancy the ureter was liable to become enlarged and displaced by pressure. Inflammation of the extremity of the ureters was a very common condition. It was extremely important to ascertain the exact condition of the ureter, and this could be readily done by palpation and catheterization.

DR. B. B. BROWN, of Baltimore, narrated a case of hydatids of the ureter in which the condition was determined by dilatation of the urethra and exploration of the bladder and ureter with the finger.

DR. COE, in conclusion, referred to several cases of hydronephrosis in which the condition had not been suspected during life. He also disapproved of the operation of kolpo-uretero-cystotomy as inefficient, narrating a case in which it had been performed, and in which an autopsy revealed the presence of renal abscesses which could not be reached by the operation.

DR. ENGELMANN, in concluding, thought that a more careful study of renal disease in its relations with pelvic disease would broaden the field of gynecological work.

DR. S. C. GORDON, of Portland, Maine, read a paper entitled

PELVIC CONGESTION VERSUS PELVIC INFLAMMATION.

Pelvic inflammation as a process and a term had for many years been a surgical opprobrium, especially what was commonly called chronic inflammation, the existence of which had been denied by Peaslee and others. Pelvic inflammation might be repeated an indefinite number of times, the results being resolution, induration, or suppuration. If the result were an indurated exudate, it would cause pressure on surrounding parts, with more or less extensive venous congestion. Prolonged congestion implied hypernutrition with hyperplasia of all the pelvic tissues to a greater or less extent, and an increased tendency to renewed attacks of acute inflammation. This was also one of the sources of the various forms of tubal disease. If there were only a passive congestion, it was evident that the sooner it was relieved by operative measures the better for the patient. Hence the absence of necessity for the prolonged preparatory treatment so often advised in connection with operations upon the pelvic organs. The reader had found such preparatory treatment harmful rather than beneficial, and considered that time and money were saved to the patient by its disuse. If trachelorrhaphy were to be performed, he would at once proceed to the operation after having thoroughly curetted the mucous membrane, and expect reparative changes in the pelvic tissues to be induced thereby. Such operations should always be done under the influ-

ence of an anæsthetic, indeed he preferred to avoid the risk of pelvic inflammations even in making applications to the interior of the uterus by using an anæsthetic for such. His personal experience had demonstrated the soundness of his propositions.

Dr. T. A. Emmet admitted that vaginal douches of hot water were not indicated after an acute inflammation had terminated. A fundamental fact was that inflammation of the connective tissue in all cases meant destruction of that tissue, whether it resulted in resolution or abscess. Localized peritonitis must frequently be the result of such inflammation, and this accounted for the frequent presence of adhesive bands and scars in the peritoneal cavity. With the cellulitis were also associated phlebitis and lymphangitis; then as the cellular tissue was destroyed the veins lacked support, and distention and congestion resulted. Such a condition could frequently be relieved by steady and persistent pressure from the vagina. It was extremely necessary to draw the distinction between acute pelvic inflammation and its results.

Dr. A. P. Johnstone, of Danville, Ky., had found as the result of histological study that a great cause of the susceptibility to pelvic inflammation consisted in the peritoneal bands which, by their tension and pressure, interfered with the growth of epithelium in the tubes and uterus. The lymphoid tissue of the endometrium should develop into epithelium, but faulty conditions, such as the one which had been mentioned, caused instead the development of connective tissue.

Dr. W. M. Polk, of New York, read a paper entitled

THE SURGICAL TREATMENT OF POSTERIOR DISPLACEMENTS OF THE UTERUS.

It must be admitted that there were many cases of backward displacement of the uterus which were not relieved by pessaries. Brandt's method of treating such conditions would not be discussed on account of insufficient experience as to its value. There remained the purely surgical procedures, which were limited to the external or Alexander's operation, the various internal operations, which presupposed laparotomy, and the vaginal operation, in which the vaginal portion of the cervix was stitched to the posterior vaginal wall. Of all these methods a matured experience inclined the reader to prefer Alexander's operation, supplemented, perhaps, by the use, for a time, of an intra-uterine stem pessary, as the one which was least dangerous, and most permanent in its results. This operation, too, was efficient in relieving prolapse of the ovaries when coincident with retro-displacement of the uterus, also many cases of procidentia uteri, for which hysterectomy might otherwise be suggested. With procidentia it was, of course, implied that the pelvic floor was also to be repaired. In those cases in which the round ligaments have undergone fatty degeneration, laparotomy and internal treatment would be required; so, also, would those cases in which the uterus was firmly adherent, or in which there was coexistent disease of the tubes and ovaries. Of the methods of repair which presupposed the opening of the abdomen there were many which were based either upon the utilization of existing supports or the making of new ones. Of the latter, ventro-fixation was believed to be the best, but it had objections which were obvious. Of the former, Tait's and Imlach's implied a reefing of the broad ligaments, especially after removal of the tubes and ovaries; Wylie's, a doubling of the round ligaments upon themselves; and the reader's consisted in bringing the round ligaments in front of the uterus and stitching them together.

Dr. W. H. Baker, of Boston, Mass., preferred ventro-fixation if the abdomen were to be opened, but would avoid such a procedure if Alexander's operation were at all feasible. The question of permanence as to result was also important, and the fact that ventro-fixation frequently required repetition on account of rupture of the uterine attachments to the abdominal wall, was against the operation.

Dr. Howard Kelly thought ventro-fixation better than attachment of the uterus to the pelvis anteriorly, as proposed by Zweifel, as this brought the uterus and its adnexa into a faulty position. He had recently obtained good results in ventro-fixation by passing his sutures behind the uterus and including the utero-ovarian ligaments. He had also tried Schücking's operation in two cases with good results.

(To be concluded.)

NEWS ITEMS.

An Impudent Note.—The following were received in the regular mail, written as private personal notes, without any business heading. To a medical man they condemn themselves; and we understand that many others received similar invitations.

Dear Madam: We should be glad to have you consult us in reference to your eyes. We have been fitting glasses for over thirty years, and after careful study of the subject have adopted a new method of examination which is wonderfully effective.

One visit to our store is all that is required, consequently both a great amount of time and expense are saved.

The glasses we furnish cannot fail to give you a great deal of comfort.

Yours truly, Queen & Co.,
Opticians, Scientific and Artistic Spectacle and Eyeglass Makers

Dear Madam: Do you have trouble with your eyes, or does any of your family? If such is the case, would it not be well to call upon us and we can quickly determine what the difficulty is, and furnish you with glasses if you need them.

We do not frighten you by telling you how serious the difficulty is, nor how much time will be required to correct it, but go sensibly and practically to fitting you with as little expenditure of time and money as possible.

Hoping to receive a call from you, we are,

Yours truly, Queen & Co.,
Opticians, Scientific and Artistic Spectacle and Eyeglass Makers.

The Hyderabad Chloroform Commission.—*The Lancet* of September 21st, states that £1000 have been offered by the Nizam of Hyderabad to that journal to send out a representative to repeat the experiments of the Hyderabad Chloroform Commission, and to make any others that may be suggested. In its editorial columns, *The Lancet* states that Dr. Lauder Brunton has been requested to act as their representative, and also that their request

has been accepted and that Dr. Brunton would sail on the 4th inst. This is confirmed by personal mail received by us.

The Commission is to be at the disposal of and under the directions of Dr. Brunton, who is to be the guest of his Highness the Nizam, and is to be provided with instruments, appliances, and everything which may be required for the experiments.

The subject which the Commission will strive to settle definitely and once for all is, "Whether chloroform exerts any direct action upon the heart or not." Their experiments so far tend toward the negative. The coming experiments will extend over a period of about three months.

Improvement of Jefferson Medical College.—The Jefferson Medlcal College and Hospital will soon add a building to the group already located at Tenth and Sansom Streets, as the needs of the college and hospital have increased to such an extent that the Board of Trustees have found it necessary to have another building.

A Maternity Hospital.—A Maternity Hospital has just been added to the other clinical facilities of the Medical Department of the University of Pennsylvania. Although bnt a single wing of the hospital has been built, equipped, and opened, it will nevertheless have a maximum capacity of fifteen confinements a month. Pregnant women are admitted a month before their expected delivery. To each case two students are assigned, who are required to fill out a complete and elaborate record of the case, under the direction of a demonstrator, from the date of admission till the end of the puerperium. These records are modelled in great part upon those adopted in the large maternity hospilals connected with universities in Germany. The safety of the patients is secured by a thorough system of antisepsis, and they are guarded from unnecessary exposure by giving to each woman a separate room during delivery and the lying-in period.

The Medical Schools of Philadelphia.—The medical sehools of this city began their sessions with the first week of October.

At the Jefferson Medical College no introductory lecture was given, owing to the illness of the lecturer, Dr. W. W. Keen. The number of matriculants up to our going to press is 450.

The course at the University of Pennsylvania was opened by an introductory lecture by Dr. James Tyson, the Dean of the Faculty, on Tuesday, October 1st. The class at this school is unusually large. The new matriculants, up to date, number 175; the second year 155; and the third year 148.

The Medico-Chirurgical College opened its course with a lecture by Dr. J. M. Anders, on Monday, September 30th. We understand that the classes at this school are also larger than heretofore.

New Autopsy Building and Theatre.—A very picturesque building is now going up on the southern side of the grounds of the Hospital of the University of Pennsylvania. The first floor at the north end contains an autopsy theatre, modelled after that of the Johns Hopkins Hospital, with rising steps, so that the autopsy can be comfortably witnessed by all present. This little theatre extends to the roof, from which it is lighted by a skylight. It is provided with a granolithic floor, and the walls are tiled to the height of a man. In addition to the autopsy room on the first floor is a small "laying out" room, where the friends of the dead can collect, and from which a funeral may take place if desired. Between this and the autopsy-room, and communicating with both, is a cold chamber for the accommodation of dead bodies, which are thus preserved, but are not in immediate contact with ice. On the second floor is a photograph- and microscope-room with a developing-room attached.

The exterior is rather quaint and attractive in appearance, with an entrance for students on the north or hospital side by a vestibule, extending part way along the west side of the building, while along the entire east side extends a covered porch or *loggia* in which is also an entrance at its south end. The house is so constructed that it may at any time be enlarged.

Mississippi Valley Medical Society.—This Society held a very successful meeting at Evansville, Indiana, September 10th, 11th, and 12th. The presiding officer, Dr. J. F. Cook, of Indianapolis, did not deliver a formal address at the opening of the session on account of the lengthy programme, amounting to ninety-eight papers.

The Committee on Nominations, through their Chairman, Dr. I. N. Love, reported the names of the following gentlemen as officers for the ensuing year:

President.—Dr. Joseph M. Matthews, of Louisville.

Vice-Presidents.—Drs. C. B. Earley, of Pennsylvania, and T. B. Harvey, of Indianapolis.

Permanent Secretary.—Dr. E. S. McKee, of Cincinnati, O.

Treasurer.—Dr. C. F. McGrahan, of Chattanooga, Tenn.

Chairman of Committee of Arrangements.—Dr. I. N. Bloom, of Louisville.

The place of the next meeting, to be held on September 9, 10, and 11, 1890, will be Louisville.

American Rhinological Association.—The annual meeting of this Association will be held on the 9th, 10th, and 11th of October, at the Palmer House, Chicago. The meeting will be presided over by Dr. John North, of Toledo, and the programme promises to be a most interesting one. Among the titles of papers to be read we notice the following: Brain Abscess emptying into Naso-pharynx; Chronic Rhinitis; Conjunctival Troubles resulting from Nasal Disease; Ocular Reflex in Nasal Disease; Catarrhal Neuralgias, and others. The Association extends a cordial invitation to the profession in general.

Rarity of Christian Charity.—A short time ago the Mayor of New York refused to furnish dogs from the pound to some gentlemen engaged in making certain surgical and bacteriological experiments. The request of one of the experimenters was given considerable newspaper notoriety, and he was recently the astonished recipient of the following letters, written from widely separated localities. The *New York Medical Journal* of September 21st prints these anonymous communications *verbatim et literatim*, leaving all comment to its readers:

"You vile merciless rascally *friend*. I judge from your name you are a nasty Frenchman with no heart, and without a God. If you think you will be permitted to set up a place of Torture in this country for poor animals you are vastly mistaken. You will have to betake yourself to the vile and *Godless* country from which you came or to the Hell to which you are destined, and if you wish to indulge in such fiendish performances when you reach the latter place—which I hope you will soon—unless you *repent* you will have an opportunity with kindred *friends* of torturing yourselves through the endless ages of eternity. I am a woman who despises brutes and all brutal actions."

"When *pain* the most awful sensation of the human frame *exists*—let its alleviation or study prove the sole lawful guide to future cases."

"Only the most *damnable* fiend cloaked in human form ever lifted the knife in *vivisection*. May the *curse* of an all-merciful God rest upon you. Laugh, sneer, such as you do. But may every agony your hellish minds and hands inflicts be trebled upon yourselves in this world and the world to come—and upon all like you. May your death bed be such a scene of horror that all will forsake you."

Possibly some may recall that once Professor Brown-Séquard, while demonstrating to his class certain physiological experiments on a dog, was assailed by a woman armed with a parasol; and we have been informed that Paul Bert once had a similar experience. So the experimenter, who, by the way, is not a Frenchman, may congratulate himself on having had only a verbal castigation.

Changes in the Government of Blockley Hospital.—It has been decided by the Mayor and the Board of Charities and Correction of the city of Philadelphia, that all resident physicians elected to the Philadelphia Hospital shall receive their appointments under a civil service examination. In place of the previously existing examining board, consisting of members of the visiting staff, the Mayor has appointed Dr. Chapman, of the Jefferson Medical College; Dr. Curtin, of the University of Pennsylvania; and Dr. Waugh, of the Medico-Chirurgical College, to carry out the new regulations.

Blockley Hospital Examinations.—The Examining Board will meet at the Civil Service rooms, in the City Hall, on Wednesday, October 9th, at 11 A.M., to examine candidates for the position of Resident Physician, Insane Department, Philadelphia Hospital.

An Ancient Medical Work.—Undoubtedly the oldest medical work extant is the papyrus found recently by George Ebers, the well-known writer and novelist. Dr. Ebers has just translated and published that portion of the manuscript relating to ophthalmology, which must have been written more than one thousand years before Hippocrates was born. The papyrus is said to contain much of interest.

Cholera in Mesopotamia.—Cholera is raging in Mesopotamia. Since August 19th there have been 1285 deaths. The disease first broke out in Bagdad, with great intensity, forty-eight deaths occurring in the first three days. The disease seems to be especially virulent, death occurring in from ten to twenty-four hours. Cholera has also made its appearance in Bombay and Calcutta, fifty-six cases having occurred in both places. These ports are now under quarantine.

Cholera in China.—Cholera is raging in several Chinese cities at present. The disease is worst at Pekin. With the exception of the custom house officials, and some other functionaries, all foreigners have taken refuge in the mountains.

Smallpox in Milan.—The epidemic of smallpox which has been raging in Milan appears to be fast subsiding. 161 cases were reported in January, and 236 in April, against 55 in June, and only 28 in July.

The Physician's Precedence in France.—The French legislature has passed a bill to the effect that the physician's claim on the estate of a deceased patient shall take precedence of all others.

Dartmouth College Hospital.—The plans for the Hitchcock Memorial Hospital, at Hanover, N. H., have been formally accepted. The hospital will be made to accommodate thirty patients, is to be built of stone, and will cost, including the ground, about $50,000.

Tri-State Medical Association.—The following papers have been promised for the meeting of the Tri-State Medical Association:

"Demonstrations with the Microscope," by Prof. James A. Reeves, of Chattanooga.

"Stricture," by Prof. Daniel H. Howell, of Atlanta, Ga.

"A Case of Typhoid Fever with Subnormal Temperature and Subnormal Pulse," by Dr. A. S. Wiltse, of Kismet, Tenn.

"A Plea for the Medical Education of Females," by Dr. Charles P. Gordon, of Dalton, Ga.

"Choleo-cystotomy, with a Case," by Dr. E. E. Kerr, of Chattanooga.

"Report of a Case," by Dr. William T. Blackford, of Graysville, Ga.

"Physiology of the Heart and its Valves," by Dr. W. L. Gahagan, of Chattanooga.

"Relation of the Specialist to the General Practitioner," by Dr. F. W. Skillern, of Pikeville, Tenn.

"Some Points in the Diagnosis of Skin Diseases," by Prof. E. A. Cobleigh, of Chattanooga.

"Imaginary Foreign Bodies in the Throat," by Dr. Max Thorner, of Cincinnati, Ohio.

"Antiseptic Midwifery," by Prof. F. W. McRae, of Atlanta, Ga.

Papers are promised, but their subjects not given, by Dr. F. B. Sloan, of Cowan, Tenn.; Dr. W. C. Maples, of Bellefonte, Ala.; and Dr. J. B. Cowan, of Tullahoma, Tenn. Other papers of interest will be presented.

Prof. Robert Battey, of Rome, Ga., has promised to be present.

This meeting will be held in response to the following call issued by a number of societies in Alabama, Georgia, and Tennessee:

"The members of the medical profession in Alabama, Georgia, and Tennessee are requested to meet in Chattanooga, on the third Tuesday in October, for the pur-

pose of forming a Tri-State Medical Association. All will be admitted to the meeting of the Association, but the membership will be restricted to graduates of regular medical colleges in good standing."

A constitution will be adopted at this meeting which will regulate all matters pertaining to the society.

The meeting will be called to order at 10 A.M. Tuesday, October 15th, at the Chamber of Commerce. The sessions will continue two days.

University of Michigan.—The *Boston Medical and Surgical Journal* states that the regents of the University of Michigan, at Ann Arbor, have received an offer of two acres of land for a hospital site from Mrs. Israel Hall.

An Anti-vivisection Hospital.—The *Zoöphilist* states that there will shortly be established in London an anti-vivisection hospital. A considerable sum of money has been readily obtained from a few friends of the project. One gift amounts to one thousand pounds, and it is confidently expected that other large contributions will flow in as soon as the plan is better known. It has been stated—and this episode bids fair to be a proof of it—that in a large city like London money can be secured for any project, however strange and novel, provided that it shall be fully advertised.

Fraudulent Medical Diplomas.—An enterprise for the sale of medical diplomas has been discovered in New England, having its headquarters at Boston. The diploma that has been discovered to be for sale bears the title of the Trinity University of Medicine and Surgery, at Bennington, Vermont. This high-sounding name, of course, represents an institution which exists on paper only. The managers of this diploma mill have invented other titles of colleges for the deception of the unwary. It is stated that they have blank diplomas, covering a wide range of territory—for example, the Montreal Medical College, University of New Hampshire, New York State Medical College, Trenton Medical College, and University of Cincinnati. These titles are purely fictitious, but some of them are cunningly worded, so as to resemble those of *bona fide* institutions, with intent to deceive. It is further reported that the ringleaders of this fraud are known and will presently be arrested.

The Late Dr. Habershon.—It would appear that the fatal disease in the case of the late Dr. Habershon, of London, was gastric ulcer; this is the reported result of a post-mortem examination, confirmatory of his own ante-mortem opinion. By a strange coincidence, this is the very disease which, of all others perhaps, he had studied the most, and about which the profession was wont, with especial frequency, to consult him.

Responsibility of the Drunkard.—M. MOTEL read a paper on this subject before the International Congress of Psychology recently held at Paris. He said that a man was not responsible for a crime committed during the delirious period of drunkenness, nor when the crime was committed by a man suffering from chronic alcoholism, whose brain has undergone those changes which compromise the regular functions of the organ. The responsibility was attenuated in the cases of those persons naturally of a weak intellect and who take drink badly; it is also extenuated when it has been proved that the man got drunk unintentionally. On the contrary, to those who got drunk with intention, and where alcohol was taken to give courage in order to commit a crime, no extenuation should be allowed. In conclusion, the author proposed that in presence of the great increase of alcoholism in France, and the terrible crimes committed under its influence, the government be invited to take steps to guarantee society against criminal dipsomaniacs, and for that purpose to establish special asylums for the treatment of habitual drunkards. The assembly adopted this proposition unanimously.—*Medical Press and Circular*, September 4, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING SEPTEMBER 28, 1889.

GORGAS, A. C., *Medical Director.*—Detached from Examining Board, and ordered to Hospital, Philadelphia, Pa.

HORD, W. T., *Medical Director.*—Detached from Hospital, Philadelphia, Pa., and wait orders.

BOGERT, E. S., *Medical Inspector.*—Detached from New York Navy Yard, and ordered to Examining Board.

MCMURTRIE, D., *Surgeon.*—Detached from U. S. S. "Vermont," and ordered to Navy Yard, New York.

BABIN, H. J., *Surgeon.*—Ordered to the Receiving-ship "Vermont."

HALL, C. H. H., *Passed Assistant Surgeon.*—Resigned from the Naval Service, to take effect November 1, 1890, and resignation so accepted.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 24 TO SEPTEMBER 30, 1889.

By direction of the Acting Secretary of War, the leave of absence for fourteen days, on surgeon's certificate of disability, is granted ANDREW K. SMITH, *Colonel and Surgeon.*—Par. 1, *S. O. 214, A. G. O.*, September 14, 1889.

By direction of the Acting Secretary of War, GEORGE M. STERNBERG, *Major and Surgeon,* having completed the duties assigned him in War Department S. O. 30, A. G. O., February 5, is reassigned to duty as Attending Surgeon and Examiner of Recruits at Baltimore, Maryland.—Par. 12, *S. O. 218, A. G. O.*, September 19, 1889.

By direction of the Secretary of War, the leave of absence granted BENJAMIN F. POPE, *Major and Surgeon,* in S. O. 54, August 17, 1889, Department of Texas, is extended one month.—Par. 6, *S. O. 224, A. G. O.*, September 26, 1889.

By direction of the Secretary of War, the station of LEONARD Y. LORING, *Major and Surgeon,* is changed from Fort Mojave, Arizona Territory, to Fort Wingate, New Mexico, and he will report for duty at the latter accordingly.—Par. 7, *S. O. 219, A. G. O.*, September 20, 1889.

ADAIR, GEORGE W., *Captain and Assistant Surgeon.*—Leave of absence for one month.—*S. O. 90, Headquarters Department of the Platte*, September 25, 1889.

By direction of the Secretary of War, HENRY G. BURTON, *Captain and Assistant Surgeon,* will report in person, on the expiration of his present sick leave of absence, to the commanding officer David's Island, New York, for temporary duty at that station, and by letter to the superintendent of recruiting service.—Par. 3. *S. O. 223, A. G. O., Washington.* September 25, 1889

With the approval of the Secretary of War, leave of absence for fourteen days is granted ALONZO R. CHAPIN, *Captain and Assistant Surgeon.*—Par. 10, *S. O 223, A. G. O.*, September 25 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, OCTOBER 12, 1889. NO. 15.

ORIGINAL ARTICLES.

NOTES ON THE FORMATION OF PIGMENT IN THE NEGRO.[1]

BY ROBERT B. MORRISON, M.D.,

SURGEON TO THE OUTDOOR SKIN CLINIC OF JOHNS HOPKINS HOSPITAL, BALTIMORE.

IN the city of Baltimore, whence I come, the proportion of the negro to the white is very large. In round numbers, it may be stated that about twenty-five per cent. of the cases presenting themselves for treatment are of the negro race.

The negro is a happy, easy-going being, with but little care for the past, present, or future. His idea of morals or self-constraint in any way is slight. He eats and drinks gluttonously, and his animal passions pass all bounds when once they are excited. He increases in number rapidly as long as the child-bearing period exists. He lives generally in indifference to his surroundings, whether they be foul or filthy.

With us in America the reason for all this is the sudden enfranchisement of the whole race, whereby they were changed from a dependent, almost unexceptionally well cared for, people, to one which was, without preparation, forced to make its own livelihood and to stand upon its own resources. The condition of the negro race since our civil war has been a serious question for physicians as well as philanthropists and philosophers.

From the abject poverty which they have been thrown into, many diseases have spread among them which were almost unknown when they were necessarily well cared for on plantations. Diseased negroes could not work, nor could they be well sold, hence they were housed, fed, and clothed in a healthy manner. Crowded, as they now are, in narrow back alley-ways or in tenements, with whole families in one room, it is no wonder that skin diseases, due to want of hygiene and nourishment, flourish among them.

Histologically the skin of the black race is more coarse and thick, more tough, than that of the white race. It is composed of more dense fibrous tissue, the glands are larger, as are also the nerves and vessels running into the papillary layer. The epidermis is thicker, and slightly yellowish in color, thereby adding somewhat to the general color of the skin. The pigment which lies in the first layer of the epidermis determines the color of the skin, not so much by its quantity as by its density of shade. That is, in a true black man the pigment is deep black, while in the mulatto it is present in the same quantity, but the color of the granules is lighter. There are fewer elastic fibres in the negro skin, and more subcutaneous adipose tissue than in the white. The nerves, though larger, are less sensitive both to external and internal agencies.

In diseases such as vitiligo and leucoderma, the loss of pigment is often rapid and extensive, so that in some instances the black man turns almost entirely white. In diseases where there is an increase of pigment in the white, there is either no change in the black or else there is loss of pigment. For instance, in eczema, where there is much scratching in the whites, the amount of pigment is increased, but in the negro where the epidermis has been injured, there is frequently a lessening, sometimes even an entire loss of pigment. Almost all eschars in the negro when first found are of a dull yellowish-white color, and generally and gradually take on the color of the surrounding tissues by closing in upon the spot from their periphery. It may be well to state that the negroes spoken of in this paper are the true black men or women, and not that portion of the race which has a mixture of one, two, three, or more per centum of white blood in their vessels.

Another instance where disease causes quite the reverse appearance in the negro to that in the white is psoriasis, for while this disease is rare in the negro, it heals quickly and leaves whitish spots behind, which sometimes never take on color again, so that we might think upon first viewing such a case that we had one of vitiligo before us.

Instead of having a macular syphilide, meaning a roseolar, we have a spotted appearance of the skin, the spots being whitish, and not red or copper colored. Congenital pigmented nævi are not uncommon in the negro, while, as one might expect, port-wine marks do not show even if there should be a condition of the skin similar to that of the white race which produces such a state.

[1] Read before the International Congress of Dermatology and Syphilis held in Paris, August, 1889.

As has been said, the pigment lies in the first layer of the epidermis, and in health does not penetrate higher. In some instances, however, the pigment granules are carried up into and between the epidermic cells almost to their most superficial layer.

In a case of elephantiasis arabum of the vulva[1] in which excision of the tumor was performed, the microscope disclosed that the pigment had been carried from its normal position through the lymph spaces far up into the epidermic layers. It is, of course, easy to understand why this should be, since we know that in elephantiasis arabum all the lymph glands, vessels, and spaces are enlarged. It would seem, also, that as the pigment is carried into what might be called foreign parts, its place is supplied by the formation of more, so that we have, in a case like this one, an increase of pigment, which, although in itself apparently harmless, might in other cases prove a source of malignant disease, the channel by which it spreads being possibly the lymph vessels and spaces. The extra formation of pigment in this particular case, a formation found in proportion to the amount carried into the surrounding tissues, is suggestive. At any rate, there was no loss of pigment in the line which marks its normal position.

The question as to when the formation of pigment takes place in the negro, *i. e.*, at what time of intra- or extra-uterine life, brings me to the principal point of this paper. It is popularly and scientifically stated by many authors that the children (babies) of negro parents are born white or without pigment in their skins.

Kölliker[2] says:

"The pigment of the mucous membrane in the colored races, as in the Europeans, is developed after birth; but in the former—the negro—the margins of the nails, the areola of the nipple, and the genital organs become colored about the third day, and by the fifth or sixth day the color is diffused over the whole body."

This quotation from Kölliker certainly implies that the negro baby is born without pigment and that it takes five or six days for it gradually to appear. This means, apparently, that microscopically there is no pigment in the negro fœtal skin.

Unna[3] says:

"It is very desirable that the origin of the physiological pigment of the skin should be thoroughly investigated. partly because we have no sure basis for the judgment of pathological skin pigment, partly because the origin of skin pigment, as in the history of the development of the hair, is sure to play, from an ethnological standpoint, an important part. For it is known that the colored races at birth are still without pigment (pigmentless), and an exact study of the manner and time of pigmentation in the embryo and newborn would be better able to clear up the relationship of races than the hitherto vain endeavors to draw conclusions from the hair and color of adults."

This quotation from Unna clearly shows that he thinks the negro fœtus and newborn baby is without pigment, which only appears some time after birth. In a personal interview with the author just quoted, the writer of this paper called his (Unna's) attention to the statement made. He said it was from reading and not from personal investigation which had led him to make it. He hoped some one would investigate who had the opportunity and who was brought into contact with the negro race.

Lesser[1] says:

"And I call to mind in this respect the known fact that the children in colored races are also born with entirely white skins and the pigment peculiar to them first develops in the early time of extra-uterine life."

It seems that the highest authorities in histology and dermatology agree that the negro is born white.

A doubt as to the correctness of this idea suggested a cursory investigation to the writer, who has many friends accustomed to deliver negro women. The answers received from many were not satisfactory because they had never thought of noticing the color of the child when born, knowing the mother to be black. Some of them ridiculed the idea of white negro babies, saying they had plenty of color the first moment of birth.

Several had delivered the mothers of negro babies who were themselves white, the mother acknowledging that the father was black. One physician of large experience said the babies of true negroes are born "as black as the ace of spades."

There was but one way of settling the question, viz., by microscopic examination. My assistant at the Johns Hopkins Hospital, Dr. Lord, had delivered a stillborn, eight months fœtus whose father was very black and the mother moderately so. Sections were made from the skin taken from the arm of this child. There was an unmistakable line of pigment granules lying in the lowest layer of the epidermis which could be seen microscopically as well.

In another case which Dr. Neale, of the Maryland University Lying-in Hospital, provided, sections from the prepuce of a negro baby which had died in utero thirty-six hours before birth, also showed pigment under the microscope. It was not as distinct as the specimens from the first case, as the child's parents were not black but mulattoes.

From this investigation, I feel justified in saying that the children of true negroes are not born without pigment however they may appear to the naked

[1] THE MEDICAL NEWS, April 23, 1887, by the author.

[2] Manual of Human Microscopic Anatomy, Buchanan's translation, p. 94.

[3] Ziemssen's Encyclopædia, "Skin Diseases," vol. i. p. 114.

[1] Ibid., vol. ii. p. 161.

eye. The probability is that the general congestion of the skin, the washing of the vernix caseosa from it, and the thinness of the epidermis which shows the papillary vessels more plainly beneath, cause the pigment to be overlooked when in reality it is there. Negro babies are, therefore, not born white nor do they suddenly grow black. They have pigment in the skin at least a month before birth, which can be plainly seen even with the naked eye.

The embryonic study of normal pigment in the negro will be a matter for future investigation which, as Unna has suggested, may help the pathological study of it.

The investigation must be made, however, entirely independent of the idea that negro babies are born white.

THE RELATIONS BETWEEN CHLOROSIS, SIMPLE ANÆMIA, AND PERNICIOUS ANÆMIA, INCLUDING LEUCOCYTHÆMIA AND HODGKIN'S DISEASE.[1]

By FREDERICK P. HENRY, M.D.,
PHYSICIAN TO THE PHILADELPHIA HOSPITAL.

(Concluded from page 368)

In an earlier part of this article I defined an independent disease to be one which rests upon a constant anatomical basis, or is invariably produced by the same specific agent. If this definition is accepted, pernicious anæmia cannot be regarded as an independent disease. Hunter and others have found, in this affection, a constant and decided increase in the amount of iron in the liver, and regard this as its essential anatomical feature. Without any wish to detract from the value of this observation, it seems to me unquestionable that this increase of iron in the liver is a consequence of defective hæmogenesis, and therefore to be classed with fatty degeneration of heart and other secondary changes. It is, in my opinion, plainly evident that the blood corpuscles of pernicious anæmia have undergone a marked degeneration. As I have elsewhere remarked,[2] the facts with reference to the blood of pernicious anæmia are such as to demonstrate a reversion to the type of the cold-blooded animals. This theory might justly be regarded as fanciful, if it were based upon a resemblance of the blood of pernicious anæmia to that of the lower animals, fishes, and reptiles, in any one particular, but the facts show that the corpuscles of pernicious anæmia resemble those of the said animals in their number, their size, their shape, and their percentage of hæmoglobin. In well-marked cases of pernicious anæmia we observe:

1. A reduction of the number of red corpuscles to a degree that is normal to the cold-blooded animals. It is not at all uncommon, in this disease, to find less than one million red corpuscles per cubic millimetre. Figures such as these are normal in the cold-blooded animals.

2. Many of the corpuscles are much increased in size, so much so that they have received the name of megalocytes. Many of them are quite as large as the corpuscles of the lizard and eel.

3. They often show a tendency to assume an oval outline. The great increase in the size of the diseased corpuscles and their oval shape are very remarkable. The patient from whom the blood was taken was a typical case of pernicious anæmia.

4. To make the resemblance complete, nucleated red corpuscles have often been observed in the blood of pernicious anæmia.

It is a most significant fact, in connection with the relations of the various affections under discussion, that the term "idiopathic" has never been applied to leucocythæmia. This disease was no sooner described by Bennett and Virchow than its association with structural changes in the blood-making organs, especially the spleen, was recognized. It corresponds, therefore, to our definition of an independent disease in being one which rests upon a constant anatomical basis.

The blood-changes of leucocythæmia are so remarkable that they would warrant the separate classification of this disease, even if there were no other constant anatomical lesions associated with it. In the first place, the volume of the blood, which is diminished to such an extraordinary degree in pernicious anæmia, is, in leucocythæmia, not only maintained, but sometimes augmented. In typical cases of this disease there is a condition of plethora, concerning the nature of which there has been some discussion. In the most minutely studied case of leucocythæmia with which I am acquainted—that of Sticker[2]—

> "The increased tension of radial and carotid arteries, the loud aortic-valve sound, and the fulness and tortuousness of retinal arteries and veins, pointed unmistakably to a condition of plethora which Sticker considers hydræmic. On the other hand, von Bamberger,[2] who has often observed dilatation of the heart cavities and abnormal fulness of the vessels in the bodies of those who have died of leukæmia, is doubtful as to the hydræmic nature of this plethora."[3]

He withdrew, by venesection, a small quantity of blood from a leukæmic patient, and analyzed it, with the result of proving that its solid residue was greater

[1] Read before the Association of American Physicians, September, 1889.

[2] Philadelphia Medical Times, April 3, 1886.

[1] Zeitschrift für klinische Medicin, Bd. 14, 1888.

[2] Wiener klin. Wochenschrift, No. 14, 1888.

[3] F. P. Henry: Annual Univ. Med. Sci., vol. iv. 1889.

than that of normal blood. He, therefore, proposes for this condition the term *leukæmic plethora*.

The facies of a leukæmic patient is entirely different from that of a case of pernicious anæmia, and of itself shows that the vessels are well filled with blood. Sticker's patient is described as having a bright color—*eine lebhaftere Färbung;* and Delafield[1] reports the case of a man whose lips and skin were of "good color." I, myself, was surprised at the rosy color of the first leukæmic patient whose blood I examined. In addition to this plethoric state of the blood, the increase in the number of the white corpuscles, from which the disease derives its name, the more marked tendency to hemorrhage, and the new formations of lymphadenoid tissue in various parts of the body, all suffice to separate this affection from simple anæmia, chlorosis, and pernicious anæmia.

It remains, therefore, to be considered whether there is any relation between leucocythæmia and Hodgkin's disease. Without pausing to consider the appropriateness of the term, I may say that by Hodgkin's disease we understand an affection of which the most prominent features are an enlargement, more or less general, of the lymphatic glands, enlargement of the spleen chiefly due to hypertrophy of its Malpighian follicles, new formation of adenoid tissue in various parts of the body, and a high, though usually not an extreme, degree of anæmia. From this description it is evident that the lesions of Hodgkin's disease are very similar to, if not identical with, those of lieno-lymphatic leukæmia. In fact, the only material point of distinction between them is the excess of circulating leucocytes in the latter. If, then, we can point to any cases of Hodgkin's disease in which the circulating leucocytes, at first normal or subnormal, subsequently increased in number to an inordinate extent, we are justified in regarding them as instances of transition from the one affection to the other, and in assuming a close relation between them.

Fleischer and Penzoldt[2] hold that there are cases of lymphatic pseudoleukæmia which represent the initial stages (*vorstufen*) of a genuine lymphatic leukæmia, and report one in which the transition from the former to the latter was demonstrated. The patient was a male, æt. forty-two, who presented extensive glandular swellings in the neck on both sides and in the left axilla, which slowly enlarged while the condition of the patient became gradually worse. The blood was repeatedly examined, but it was not until about fourteen days before death—*i. e.*, nearly a year after the first blood examination—that the proportion of white cells to red had increased to such an extent (1 : 9) as to warrant the diagnosis leukæmia.

[1] Philadelphia Medical Times, Feb. 1, 1889.

[2] Deutsche Archiv für klinische Medizin, B. 26, 1880, S. 368.

Mosler[1] reports a case of pseudoleukæmia (Hodgkin's disease) in a boy, fourteen years old, who, when first seen, had enlarged glands in both axillæ, both supra-clavicular regions, and in the cervical and infra-maxillary regions. Neither spleen nor liver was enlarged at first, and there was no increase in the number of white corpuscles. There was moderate fever. The disease, under treatment by arsenical injections into the glands, came to a standstill for sixteen days, the examination of the blood still giving a negative result, so far as concerns the number of the white cells. The patient then returned home. Eight days later severe fever set in; the existing glandular tumors enlarged and new ones made their appearance. It also became evident, on physical examination, that the spleen and liver were decidedly enlarged. On microscopic examination the white corpuscles were now found to be increased in number to such an extent that Mosler estimated them to be equal to the red. The case ran the usual fatal course of leukæmia, but was unusually acute, its whole duration being less than two months. Mosler concludes that too sharp a distinction has been hitherto made between so-called pseudoleukæmia and leukæmia, notwithstanding the fact that this is the first case, in his large experience, in which he had observed a transition from the former to the latter affection.

The rarity of such observations as the above is undoubtedly great, but, according to Fleischer and Penzoldt, may be explained in three ways: 1. The transition is overlooked because the blood is not examined with sufficient frequency. 2. A certain time must elapse before the transition is accomplished, and death generally occurs during the pseudoleukæmic stage. For example, in Fleischer and Penzoldt's case the stage of leukæmia was not reached until eight months after the first examination of the blood, and, therefore, if death had occurred from any accident or complication within that period, the case would have been reported as one of pseudoleukæmia. 3. There may be cases of multiple lymphatic tumors which have no relation whatever to leukæmia, but belong to an entirely different species.

As a rule, there is no absolute increase in the number of circulating leucocytes in Hodgkin's disease, and, as just stated, instances of transition from this affection to leukæmia are rarely observed, but cases are not so uncommon in which the number of the white cells, while greater than under normal circumstances, is scarcely great enough to warrant the diagnosis of leucocythæmia. Laache[2] reports such a case—one in which the blood was repeatedly examined—the proportion of white to red corpus-

[1] Virchow's Archiv, Bd. 114, 1888, S. 461.

[2] Die Anämie, p. 273.

cles varying between 1 : 70, the highest point, and 1 : 339, the lowest.

I am inclined to regard an excess of white cells in the blood as the expression of a form of defective hæmogenesis which may be the terminal stage of any profound anæmia. In Fleischer and Penzoldt's case, leucocythæmia did not set in until fourteen days before death. In a case of pernicious anæmia reported by Litten,[1] the blood, previously without an excess of white cells, was found to be leukæmic (1 : 15) four days before death, and this condition continued to increase until the day before death, when the proportion of white cells to red was as one to four. In a case reported as pernicious anæmia by J. H. Musser,[2] the term leucocythæmia would, at one stage, have been more appropriate, for the white cells were to the red about as one to four. I recently examined the blood of a profoundly anæmic patient at the time of her admission to the Philadelphia Hospital—two days before her death—and found such an enormous increase in the leucocytes that, at the autopsy, which revealed a large perinephritic abscess, I made a careful, though fruitless, search for some communication between the abscess and a venous trunk. The woman had been in the hospital a short time before, in another ward, and had been regarded as a case of pernicious anæmia. The leucocythæmia was undoubtedly a late manifestation of her cachectic condition.

The foregoing facts lead me to accept the first and fourth conclusions of a paper on the "Relations of Leucocythæmia and Pseudoleukæmia," published many years ago by H. C. Wood:[3]

"1. Clinically, the so-called true and false leukæmia are the same, save only in the matter of the white blood-corpuscles. 4. There are cases which, at one period of their course, represent pseudoleukæmia; at another, leukæmia."

I am also inclined to agree with the opinion of Pepper,[4] in so far as it applies to leucocythæmia and Hodgkin's disease, that

"a condition so inconstant and irregular as the increase in the proportion of white corpuscles should not be made a ground of distinction between groups of cases identical in all other respects."

In this paper I have endeavored to confine myself strictly to the question of the relations of these various forms of anæmia, avoiding, as far as possible, any discussion of their nature. All the time at my disposal would have been occupied in the attempt to enumerate and criticise the different views concerning the pathogeny of leucocythæmia alone.

I have tried to impart and illustrate my belief that the circumstances under which chlorosis and pernicious anæmia arise are so numerous and diverse as to forbid our regarding them as independent diseases. They are, in my opinion, neither more nor less than closely related processes of defective hæmogenesis.

Leucocythæmia and Hodgkin's disease, in that they are always associated with lesions of the blood-making organs—spleen, lymph-glands, bone-marrow, etc.—are independent diseases, or, rather, different stages of the same disease, for such cases as those of Fleischer and Penzoldt, and Mosler, prove their relations to be of the most intimate nature. They also show the fallacy of the view that the local glandular affections of leukæmia are secondary to the accumulation of leucocytes in the blood.

[1] Berliner klinische Wochenschrift, Nos. 19 and 20, 1877.
[2] Proceedings Philadelphia County Medical Society, 1885.
[3] American Journal of the Medical Sciences, October, 1871.
[4] Ibid., October, 1875.

ABSCESS OF LIVER; OPERATION; DEATH; AUTOPSY.

By W. W. TOMPKINS, M.D.,
of Charleston, West Virginia.

H. T. W., aged forty years, American. Good family history; always enjoyed good health up to fourteen months ago. May 16, 1888, was injured by a boiler explosion on a steamboat, of which he was captain.

Mr. W. was near the boiler at the time of the explosion, and was blown into the river. He was cut across the forehead, scalded about the face and neck, and received a bruise on the right side just below the ribs. He never lost consciousness, but was carried home, where he remained for several days under medical care, and was then again up and about.

The personal injuries he received, the loss of property, and an apprehension that he would be held indirectly responsible for the mischief resulting from the explosion, all tended to depress him and make him more ready to succumb to disease. After recovering from his injuries he spent a week at home and then felt well enough to attend to business.

A large portion of the subsequent history of this case I have obtained from Dr. J. F. Wilcox, his physician.

After the first week's confinement at home, immediately after being injured, he sought a physician on November 24, 1888, and was confined to the house until December 6, 1888. His symptoms at this time were *malaise*, high temperature, diarrhœa, and pain in right side. He improved after this attack, and gained eighteen pounds in the next month or so; and was about and able to attend to his business, but a diarrhœa kept up all the time which weakened him and reduced him.

He soon showed very great emaciation, loss of strength and flesh, and had a dark olive color.

After this sickness he never engaged in business, but would move about, suffering constantly from diarrhœa and pain in the side, a gradual loss of flesh and strength constantly taking place.

At the time of his first illness he weighed 190 pounds, and at the time of his death, which took

place July 10, 1889, his weight was not over 90 or 100 pounds. His last sickness dates from June 12, 1889, when he took to his bed. At this time a tumor had formed under the ribs of the right side, and continued to grow downward and project forward, the patient constantly growing weaker and more emaciated. Appetite was poor, high fever existed and often chills, also a diarrhœa that was constant and that did not improve under treatment.

I was called by Dr. Wilcox, and saw him June 23, 1889. At this time the tumor extended from the lower border of the fifth rib on the right side to the crest of the ileum, and laterally to the middle axillary line. To the hand it felt hard, and all over this space dulness, or, more correctly, flatness, was found on percussion. At this time his temperature ranged from 101° to 104° F.; sweating was free; tongue furred; considerable dyspnœa; slight headache; and pain in side and over tumor, not acute, but with a sensation of fulness, as if the part was stretched over something.

A red spot as large as a silver quarter was found below the free border of the ribs, the skin was smooth and glossy. Dr. Wilcox had made a puncture in this spot the day before I saw him, and obtained a few drops of pus. On this and the history with the physical characteristics we diagnosed abscess of the liver. An incision about one inch in length was made through this spot and three pints of pus were evacuated. The swelling now in a large measure diminished, the temperature became normal, the pulse reduced in frequency, and the patient spent a comfortable night, the first for a week or ten days.

This abscess cavity was washed out two or three times a day with warm water in which some antiseptic was dissolved. A large quantity of water being used until the water that returned was perfectly clear.

After a period of four days the tumor was observed to grow larger near the median line, and the skin became red and showed indications of pointing as it had before. An incision was made here of an inch or an inch and a quarter. A quart of pus was evacuated, and again the patient became better and spent a good night. This last operation was on June 29th. From the 23d up to this time the first opening had continued to discharge freely, and after the second opening it, as well as the latter, would discharge pus whenever patient coughed or changed his position or would take a deep inspiration.

After this the patient became much troubled with vomiting; would vomit mucus and portions of liquid food; diarrhœa was constant, and did not yield to treatment. July 1st vomited pus, and also passed pus per rectum. The abscesses at first were separate, but, a week before death, water injected into one opening would come out the other. Portions of liver tissue would float into the mouth of the wound or into the drainage-tubes and occlude them, causing the patient to feel worse; they would then be removed and cleansed, and when the pus flowed freely he always felt better. The passing of pus by rectum and the vomiting showed perforation, and when the abscess-cavity was washed out the injected fluid would be passed in the same way.

July 8. Vomited and passed by rectum a quantity of foul-smelling, gangrenous matter. This was very abundant, and the smell was so offensive that the physicians and nurses could not stay in the room without being nauseated. This continued with but slight cessation up to the time of his death.

The patient's mind was never confused or clouded. He always took a cheerful view of the situation, and thought, up to within twenty-four hours of his death, that he would recover.

Autopsy, two hours after his death, conducted by Dr. J. F. Wilcox, assisted by Dr. L. Cox and myself. There were observed great emaciation and an entire absence of *rigor mortis*. A large cavity was found in the right lobe of the liver; this cavity would hold upward of three pints of fluid; it was partially divided by a partition. The liver was soft, and the hand readily broke through into the cavity when the fingers were placed above the liver and slight pressure made. An adhesion was found with an opening into the transverse colon; also an adhesion and opening into the duodenum. The gall-bladder was normal in size, but lower than it should be, and, when cut open, contained thirty-six gall-stones, one of which was larger than a pigeon's egg, and weighed 139 grains; the others were small, and collectively weighed 76 grains. There was an absence of fat in the abdominal wall as well as in the cavity. All the internal viscera looked pale and poorly nourished.

REMARKS.—Whether the explosion caused a bruise of the liver tissue, and an abscess followed, or whether the depressed condition with the diarrhœa and the abscess caused an embolus, we cannot say.

However, it is true he was never well after the injury. A portion of the time he kept up and did not consult a physician, but nevertheless felt depressed and reduced, and had a persistent diarrhœa. The pain over and about the liver was never acute, but there was a feeling of fulness and heaviness there. The thought that gall-stones might exist occurred to us, but we could never find them, although they were sought for.

The temperature was observed to fall to a few degrees below normal at the time of the vomiting of gangrenous matter, and continued so until the death of the patient.

ON RECOVERY IN CIRRHOSIS OF THE LIVER AFTER REPEATED ASPIRATION.

BY RICHARD LEA MACDONALD, B.A., M.D.,
PROFESSOR OF CLINICAL MEDICINE IN MCGILL UNIVERSITY; PHYSICIAN TO THE MONTREAL GENERAL HOSPITAL.

DURING the last few years professional opinion has undergone a change regarding the curability of cases of advanced cirrhosis of the liver, cases where the morbid process had gone so far as to cause obstruction to the course of the circulation in the por-

tal system and ascites. Most text-books give a very gloomy prognosis in this affection, one before me going even so far as to say that it is rare for a patient suffering from cirrhosis of the liver to live longer than a twelve-month after the symptoms have become so pronounced as to allow a diagnosis to be made. I have not been able to find any allusion to the class of cases that are benefited by repeated aspiration, and, so far as I know, no authority on the subject, with the exception of Flint, has laid sufficient emphasis upon the undoubted occurrence of recovery in cirrhosis of the liver, even when in an advanced stage.

Two years ago the Editor of The Medical News drew the attention of his readers to a case which I had brought before the Medico-Chirurgical Society of Montreal, where, after repeated aspirations, the fluid ceased to accumulate in the peritoneum. The patient had been admitted in August, 1885, into the Montreal General Hospital with a history of alcoholic dyspepsia followed by accumulation of fluid in the peritoneum. Sixteen months afterward I was able to report that, after sixty tappings and the removal of about nine thousand ounces, no fresh accumulation had taken place and the restoration to health was complete. Four years have gone by and I am now able to state that the patient's general health still remains good, and that there is no return of the dyspepsia. There is no doubt in my mind that the explanation of the successful result in such cases lies in the fact that the removal of fluid-pressure favors the establishment of a collateral circulation. Our anatomy teaches us that there are more ways than one by which the blood can make its way from the intestines to the liver. In fact, there are many cases on record where these by-paths have been found extensively enlarged.

If the condition of the original disease is stationary, then there is every prospect of a good recovery. Since the publication of my first case, a second one has fallen in my way. Here the result was equally satisfactory. I report the case in somewhat greater detail.

In the beginning of May, 1888, I was asked to visit a man reported to be dying of dropsy. Being unable to go that afternoon, my friend, Dr. H. Lafleur, undertook the visit and found the patient to be a butcher, aged forty-eight, who had been suffering from extreme ascites and was now in a condition of dangerous dyspnœa. A tapping with an ordinary trocar gave temporary relief with the removal of two bucketsful of serum. Two days later the abdomen was as full as ever and I tapped him myself. On the 14th of May, 1888, he was admitted into my wards of the Montreal General Hospital and it was noted in the records that he was suffering from great abdominal enlargement, dyspnœa, pain in the flanks, shooting pain in the abdomen, and a difficulty in passing urine. The patient had been all his life a butcher, and for many years had been intemperate in the daily use of the stronger kinds of spirits. When he was a boy he had had smallpox, but he has not suffered from any other serious illness. In 1886 he had an attack of jaundice with enlargement of the belly, but both disappeared after a few days. Not long afterward he began to suffer from hemorrhoids and has done so more or less ever since. In the summer of 1887 constipation and dyspeptic symptoms were troublesome and he felt very much out of health. The abdominal enlargement made itself perceptible in October, 1887, but he did not abandon his daily work until January, 1888. The first tapping took place on the 30th of March, 1888. Previously to his admission to the hospital the amount of fluid withdrawn was 3840 ounces. At the time that the abdomen first began to become distended there was jaundice which disappeared in a few days. The eyes and face, however, have remained somewhat yellow ever since. The feet have been swollen.

There is a possibility of a syphilitic taint in the family, since a large number of his brothers and sisters died in very early infancy.

On admission there was slight jaundice. Emaciation has been rapid. He weighs 142 pounds with the abdomen empty, whereas formerly he weighed much more. Appetite poor; bowels regular; urine scanty, high colored, loaded with lithates; no albumin or sugar. Abdomen is greatly distended. Girth at the umbilicus is forty-four inches; slight œdema of the feet and legs. Pulse 98, strong, and regular. Complains of the annoyance of hemorrhoids. When the abdomen is relaxed after withdrawal of the fluid, it can be shown that the liver is small, the hepatic dulness measuring but three and a half inches in the right mammary line. The apex of the heart is displaced upward by the accumulated fluid and beats in the fourth space, above the nipple. The extent of cardiac dulness is not readily mapped out. The sounds are normal. Physical signs of the lungs negative.

The patient remained in the wards until the 23d of June, and during that period was tapped six times, 1650 ounces being removed. During the rest of that summer he returned at intervals and was aspirated by members of the resident staff. I found records of three such operations, by which 910 additional ounces were withdrawn. The period between taps was now perceptibly lengthening. There were four taps in June and but two in July. After this period there is no more mention of the case in the hospital case-book. I was obliged myself to be absent from my practice for one year from the 20th of June, 1888. On resuming work in July last, I hunted up this interesting patient, whom I was surprised to find alive. After my absence he returned to his work at the butcher's stall, and put in an appearance at the Montreal General Hospital whenever the fluid became uncomfortably copious. At first it was necessary to have it removed every third week, about 200 ounces being withdrawn. There were six tappings between July 1st and November 1st. In November and December, 1888, and Jan-

uary, 1889, there was no reaccumulation, but in February last 300 ounces were withdrawn. There were but three tappings between February and May, each of about 200 ounces. Since then no fluid has appeared.

August 14, 1889. L. G. sent for me to-day to relieve an attack of vomiting and diarrhœa. For the last thirteen months, in spite of the ascites, he has been able to earn his living. He has wholly given up dram-drinking. He has felt well and strong, eaten ordinary diet, but still suffers from slight nausea and loss of appetite in the morning. According to his own record, aspiration has been performed thirty-one times, and according to my estimate no less than 8600 to 9000 ounces have been removed.

Is the patient cured? It is hard to say that any case is cured, but here was a man on the point of death from a disease well known as being commonly deadly in its effects, who, after submitting to a certain line of treatment, loses sight altogether of a most dangerous symptom, and rapidly recovers health and strength. There is no fluid whatever in the abdomen now. I examined the belly carefully on the 14th of August, 1889, and again on the 11th of September, 1889. It appears to be large, but it measures but thirty-five inches at the umbilicus. The flaccidity depends upon past distention.

In the month of August a curious train of symptoms set in, from which the patient nearly died. He was attended by Dr. W. G. Stewart, of Courville Street, Montreal, who kindly furnished me with the notes. The patient suddenly fell into a semi-unconscious condition. The tongue was thickly coated, and the stomach so irritable that nothing could be retained. There had previously been severe diarrhœa. On the following day the unconsciousness was complete. Pupils dilated. Urine passed involuntarily. On the 18th of August there was improvement, though the patient was still drowsy. In a few days he was up and at his business.

I cannot give any explanation of this attack, except that possibly it may have been caused by opium or some other substance given by mistake for bismuth powders. The symptoms set in immediately after the taking of the powders, and improvement began as soon as they were discontinued.

At the present date the patient is well and can be seen at work every day at an open stall in the St. Lawrence Market.

The conditions necessary to results such as these are the following:

1. The patient must be young, so that the vessels should be in a condition to enlarge under pressure and accommodate themselves to the altered state of the circulation. Both my patients were under fifty—the woman thirty-five and the man forty-eight. But both were younger-looking than their age.

2. There must be no other dangerous symptom present. Ascites must be the one and only morbid manifestation. Heart, lungs, and kidneys must be quite sound, and there must be no other dangerous result of portal obstruction.

3. In all cases where such good results are obtained ascites is a very early symptom, and relief is sought for at an early stage of the morbid process. There is a chance of the disease coming to a stop when the cause is removed. When a patient finds himself getting dropsical, and is told that drink is the cause, he is not likely to keep up his bad habits.

As to the particular method by which paracentesis was carried out, there is nothing to be said beyond that I think it important that the very smallest aspirator needle should be used, and that no attempt should ever be made to empty the peritoneum. Enough should be withdrawn to relieve dyspnœa and to make the patient feel comfortable. No medicinal or dietetic treatment was attempted in either case. The patients lived in the outskirts of the town, and while under treatment were often not seen for months at a time.

NEURECTOMY FOR FACIAL NEURALGIA.

BY E. M. MAGRUDER, M.D.,
INSTRUCTOR IN CLINICAL MEDICINE, UNIVERSITY OF VIRGINIA.

THE following cases in which neurectomy was performed for obstinate facial neuralgia may be of sufficient interest to be worthy of record:

CASE I.—Dr. ——, aged seventy-one; family history good so far as known; personal history also good, except that during the '60's his left foot became inflamed about the tarso-metatarsal junction without apparent cause, suppurated and discharged, preventing much locomotion for several years, with perfect ultimate recovery; no history of dead bone.

In 1875 (fourteen years ago) he began to suffer in the region corresponding to the distribution of the right supra-orbital nerve, but in a few months the seat of trouble was transferred to the infra-orbital and its distribution, and from this time on, the latter nerve and its branches were involved in frightful neuralgia, the former (supra-orbital) being affected only reflexly and during the most violent attacks. These attacks were characterized by paroxysms, with intervals of a few minutes or hours between, and which lasted at first several weeks or months, and would be followed by equal periods of almost entire relief. Gradually, however, the duration of suffering grew longer and time of respite shorter, until latterly not a day, hardly an hour, passed without excruciating torture, the pains being of a shooting, darting, electrical character; the slightest touch to the cheek or motion of the lips and jaws, as in eating, drinking, or talking, was sufficient to cause agony, the patient comparing his sensations to successive red-hot flashes of lightning through the tissues. There were also great tenderness on pressure and considerable swelling between the orbit and margin of the lip.

The patient had had malaria, but not since he was ten years old. No other cause, predisposing or exciting, could ever be traced, all the internal organs being apparently in a normal condition. He had been troubled, however, for some time with a chronic post-nasal and pharyngeal catarrh.

In the absence of any assignable cause, I made the diagnosis of peripheral neuritis, based upon the swelling, tenderness on pressure along the course of the nerve and its branches, and the superficial character of the pain.

The patient first came under my observation and care in the autumn of 1885, after ten years of suffering. Every known anti-neuralgic remedy, both internal and external, had been tried with only occasional relief. During the fall of 1886, I advised a resort to surgery as offering the only hope—though by no means a certain one—of permanent relief. The patient declined, and went to Philadelphia to consult a specialist of that city. The latter discouraged operation on the ground of its being a *dernier ressort* and uncalled for by the case in question. He prescribed iron, rest, and a visit to the seashore. This treatment was carried out, with considerable improvement, for about one year. Then the old enemy returned, reinforced, and waxed stronger and stronger, entirely incapacitating the patient for business, confining him to the house for months at a time, preventing sleep, and interfering with the taking of nourishment. All this, of course, resulted in debility, prostration, depression of spirits, and anæmia. The fluid extract of gelsemium in the dose of from seven to ten drops every three hours gave greater comfort than anything else, except morphine. Finally, even this failed in its action, and tolerance for larger and larger doses of the drug was manifested. This being the case, I again strongly advised neurectomy of the infra-orbital nerve and its branches. Consent was obtained, and I operated on June 11, 1889.

Thorough antiseptis was observed throughout, the solutions used being carbolic acid (1:30) for the instruments and corrosive sublimate (1:2000) for the person of the patient.

The patient having previously received whiskey by the mouth and atropine sulphate (gr. $\frac{1}{100}$) hypodermatically, was placed upon a table before a large window and thoroughly anæsthetized with Squibb's chloroform. The anæsthetic was well borne. I made an incision through the skin, beginning just below the lower orbital margin over the infra-orbital foramen straight downward parallel with the nose toward the lip, and ending on a level with the lower border of the ala nasi, the whole length of incision being about one inch. Then with the handle of the scalpel the fascia and fibres of the levator labii superioris were torn through and the nerve exposed at its exit, lying beneath the latter muscle and dividing into its branches, the *palpebral* running upward into the lower eyelid, the *nasal* turning inward to the nose, and the *labial* continuing downward into the lip. Each branch, spreading into a fan-shape as it neared its destination, was dissected out as far as it could be followed without mutilating the face too much. The main trunk was then seized with forceps at the foramen, drawn out as far as possible without breaking it, and cut off close to the bone, after which the various branches were divided at their farthest point of dissection. Hemorrhage was not troublesome.

The wound was cleansed with bichloride solution (1:2000), and the edges brought together with three fine silk sutures. A dry bichloride dressing was now applied and kept in place by a head-bandage.

At first considerable motor and sensory paralysis was present, but this disappeared in a fortnight, save that the right half of the upper lip still remains without motion and sensation.

The dressings and sutures were removed on the sixth day, at which time the wound was found looking well and entirely healed, without suppuration, and the wound was left uncovered. Five days later, however, distinct fluctuation was perceptible in the cicatrix, and, on a puncture being made at the upper and lower ends of the incision, about one drachm of pus was discharged. A corrosive sublimate solution (1:2000) was then injected through the pus cavity and a second dressing put on. This process was repeated two or three times until, at the end of about a week, the discharge ceased and thorough cicatrization took place.

The result of the operation was and is all that could be desired—that is, *perfect relief* from the neuralgia. The patient is now comfortable and happy, with a good appetite, which can be indulged without difficulty; sleeps well, and has gained twelve pounds in three months. He looks and feels like a new man.

Case II.—Miss ——, aged fifty-eight; father died of Bright's disease; paternal grandparents, three uncles, and two aunts died dropsical; mother died of some spinal affection. Personal history: When three or four years old patient was also dropsical (cause not known), after which health was good until she was eighteen years of age: then she passed through an attack of typhoid fever, which left her dyspeptic; but the dyspepsia has become better in the last few years.

At the age of forty-eight patient felt a slipping at the hinge of the jaw on the left side (left temporo-maxillary articulation), soon changing into *pain and tenderness on pressure*. The pain and tenderness proceeded downward and forward along the ramus and body of the inferior maxilla, corresponding to the course taken by the inferior dental nerve. At first the trouble was entirely confined to the lower jaw, but in the course of time gradually extended to the left half of the tongue, left side of the floor of the mouth, and to the left external ear, left temple, and left side of the head. There was also great tenderness, on pressure, in all of these localities, but no swelling. Attacks would occur in series of paroxysms, lasting for weeks, followed by intervals of freedom from pain, with continual lengthening of the attacks and shortening of the time of comfort. During the last three years not a day, and in the past few months not a half hour, has elapsed without agonizing torture, the most violent paroxysms being excited by the slightest touch or motion of the jaws, as in talking, mastication, swallowing, and also without any exciting cause. I have seen her during a short conversation of fifteen minutes compelled to stop several times, clasp the face with both hands, and almost cry out in the intensity of agony. As a result of her inability to take food she became thin and anæmic.

No positive cause could be discovered. There

was no history of malaria, and all the organs seemed sound. The teeth on the affected side of the lower jaw are intact; the molars have been extracted.

After exhausting the virtues of various medicinal agents, the patient came to Charlottesville to consult me in August of this year. She came prepared to submit to *any* treatment that offered prospect of relief. I kept her under observation for a week, trying different analgesics, such as quinine, antifebrin, phenacetine, and gelsemium, without benefit. Finally, I advised total extirpation of the inferior dental nerve, including its branches, and, with her consent, performed the operation August 10, 1889.

The same technique regarding antiseptic toilet of patient, hands, and instruments was observed as in Case I., the solutions being of the same kind and almost the same strength. Likewise, whiskey and hypodermatics of atropine sulphate gr. $\frac{1}{180}$ were administered beforehand, with chloroform as the anæsthetic, which was well borne.

The parts which may be injured in this operation are: 1. *The facial artery* lying one inch in front of the angle of the lower jaw, at the anterior border of the masseter muscle. 2. *Steno's duct*, which passes from behind forward one finger's-breadth below the zygoma, and corresponding to a straight line drawn from the lower portion of the concha forward to a point midway between the ala nasi and margin of the upper lip.

I began the incision a little in front of the posterior border of the ramus, just below the level of the lobe of the ear and parotid duct, and made a curvilinear incision curving *downward* half an inch in front of the inferior maxillary angle, *forward* a little above the lower border of the jaw, and *upward* just behind and avoiding the facial artery, stopping short of the line of Steno's duct *above*. The two ends of the incision were about one and three-eighths inches apart. This flap was then raised by shoving the masseter muscle from its attachment to the outer surface of the ramus, and the bone laid bare. With a five-eighths inch trephine (half-inch would have been better) a button of bone was cut from the centre of the outer plate of the ramus and raised with a bone elevator, showing the nerve lying in its bony canal. The proximal end of the nerve being seized with forceps, and strong traction made from the direction of its origin, it was cut off with scissors close to the bone as it entered the circular cavity made by the trephine. Then, the wound being stuffed with moist antiseptic cotton and pressure employed to check the hemorrhage, a second incision was made, one inch long, horizontal in direction, over the mental foramen, through skin, fascia, and depressor anguli oris, disclosing the mental nerve (one of the terminal branches of the inferior dental) and its branches lying beneath the last-named muscle. The nerve was grasped with forceps and pulled upon, but broke off at its point of exit. The branches were then dissected out and cut off as far as possible from the foramen.

Returning to the first wound over the ramus, and chiselling away the wall of the dental canal for an eighth of an inch from the circular cavity in the ramus, so as to expose this end of the nerve, which had been divided by the distal side of the trephine, with forceps it was drawn out its entire length from the ramus to the mental foramen. In all, three and three-eighths inches of nerve-structure were removed.

The wounds were thoroughly cleansed with the bichloride douche, the solution passing from one end to the other through the bony canal, the edges brought together with fine silk sutures, six in the larger and two in the smaller, and a dry antiseptic bichloride-cotton dressing applied and held in place by a head bandage.

Hemorrhage gave no trouble, and no arteries were ligated. The inferior dental artery was cut at the same time as the nerve, the two being very close together, but soon ceased bleeding on pressure.

The sutures were removed on the eighth day, at which time the wounds had entirely healed without one drop of pus, nor was there any suppuration afterward. A second light dressing was put on and retained four days longer to give the stitch-holes time to close, infection through them being thus prevented. At the end of this time everything was taken off, and the patient discharged *perfectly relieved*, nor has the neuralgia returned since.

The day after the operation there was a very disagreeable odor about the breath, probably due to irritation and disordered secretion of the parotid gland. This entirely disappeared in three or four days.

Considerable motor paralysis was apparent on the left side of the face and lower lip, the muscles being much relaxed, and the whole face on that side presenting a swollen, expressionless appearance, caused by section of the branches of the facial nerve. This also passed away in about two weeks.

The patient is now able to converse, masticate, swallow, and sleep in perfect comfort, and is prepared to enter upon the enjoyment of life, from which she has been painfully debarred for so long.

OBSERVATIONS.—(*a*) The first operation demonstrated the risk of infection from leaving stitch-holes exposed after withdrawal of the suture; so I consider it best to use antiseptic catgut ligatures and sutures in these operations, as that material, becoming quickly absorbed, will obviate the necessity of the second dressing demanded to protect the needle punctures until their closure after withdrawing the silk.

(*b*) In the second operation the difficulty, probable impossibility, of drawing the inferior dental nerve forward through the mental foramen, even though divided in the ramus, was shown. This is due no doubt to the larger size of the nerve trunk as you follow it backward toward the brain and to the points of attachment formed by the dental and incisor branches, as well as to the fact that the direction of the mental foramen is *backward* and outward from the dental canal, forming thus an *angle* with the latter.

(*c*) In trephining the ramus, it will be found that the trephine very quickly and easily passes through the outer plate of bone, necessitating great care

to avoid dividing the nerve. Should this occur, however, no harm would be done.

(*d*) When neurectomy is performed for facial neuralgia, it may sometimes be possible to remove all the affected portion of nerve, in which case there would probably be no return of the trouble. But more often the disease may be still lurking in the peripheral part left behind; under these circumstances recurrence is possible by a reformation of nerve tissue at the point of removal, so that painful sensations may be transmitted as before; the greater the gap made by excision the less danger of recurrence.

Likewise, there may be a remnant of the malady in the proximal stump, which may act as a focus for the radiation of pain. Hence, I think that in all operations for facial neuralgia the rule should be to remove as much of the troublesome nerve and its branches as the anatomical formation of the parts will possibly allow without rendering the procedure too grave; as there is no infallible means known to science of distinguishing between healthy and unhealthy nerve when lying *in situ*, the surgeon should not be afraid of removing too much tissue.

(*e*) Before the proximal section is effected, strong traction should always be made from the great nervous centre, since the stretching thus imparted exposes more to the knife, and may also be beneficial should the stump, which is beyond reach, be diseased.

(*f*) I do not believe, from my limited experience, that this operation favors the occurrence of neuralgia in other nerves not previously affected. Predisposition to it may exist as before, and the disease may appear elsewhere, but the danger is not increased by the operative process.

Neither of the above cases has had any recurrence, and, indeed, it is difficult to imagine how there could be, considering the large gap left in the sensory tract, unless the proximal stumps are in an abnormal state.

My thanks are due to Dr. H. T. Nelson, of this city, in both of these operations for his skilful administration of the anæsthetic.

THE CONSERVATIVE TREATMENT OF COMPOUND FRACTURES, WITH AN ILLUSTRATIVE CASE.[1]

By W. R. WHITEHEAD, M.D. (Paris),
CONSULTING SURGEON TO THE ARAPAHOE COUNTY HOSPITAL, DENVER, COLORADO.

The question of the conservation of a limb after a badly comminuted compound fracture is of interest to every doctor. Indeed, no general practitioner of medicine and surgery, either in the city or country, can escape responsibility in the management of such cases, when they fall to his lot, even should he summon to his aid those more skilled and experienced in the treatment of fractures.

There is nothing, in my opinion, that so thoroughly tests the practical sense and capability of a surgeon as the manner in which he manages a broken limb in which there are destruction of the soft parts and multiple fractures of the bone, complicated with an extensive external wound.

The recent and improved antiseptic treatment of all wounds gives additional interest to the result of these cases; because, provided certain physiological conditions are maintained, the question of amputation should not be considered.

When the general condition of a patient, after a bad compound fracture, is fairly good, and the main artery, vein, or nerve is not injured, then the question is generally thought to be of easy solution in favor of an attempt to save the limb. But sometimes this is not the case; and it should not be forgotten that, in such cases, the physical condition of the patient, if previously healthy and robust, is not the only factor to be considered in forming a decision as to how to manage a bad compound fracture. The will-power, courage, self-control, and endurance of the individual count for a great deal in aiding the surgeon in proper efforts at treatment.

In timid and apprehensive people, who are irresolute and faint-hearted, a quick amputation, done under ether, and after the most scrupulously exact aseptic rules, will save life, whereas long-continued conservatism, resulting in repeated counter-openings and many painful dressings, is more apt to prove fatal. Such are some of the considerations to influence the question of amputation with a prudent surgeon.

When conservative treatment is decided upon, much depends on the judicious local management and general treatment of a bad compound fracture.

It can be truly said that we cannot establish rigid rules for the treatment of fractures, which will serve as a guide.

As it is my object to be brief in my remarks, and to give practical illustrations, I have selected the following case of railroad injury to present to the Society as an example of a good result, after a very bad compound fracture of the thigh, accompanied with a crushing injury of the foot of the opposite side, and which required amputation after Pirogoff's method.

This patient is present for your inspection, and can answer questions concerning his present condition.

Charles Folkard, aged thirty-one years, on July 10, 1888, sixty or eighty miles from Denver, fell under the wheels of a freight train while in motion and had his right foot crushed close up to the ankle-joint, and his left femur broken in half a dozen or more fragments just above the knee-joint. The

[1] Read before the Colorado State Medical Society, June 18, 1889.

rectus femoris muscle was ruptured, its ruptured ends crushed, the skin covering it was rudely torn and contused, and a fragment of bone projected slightly outward, through the external wound.

Both the wounds of the foot and thigh were covered with dirt and clotted blood, and had been exposed to the air during fifteen or eighteen hours previous to his arrival at Denver at the Arapahoe County Hospital. I saw him soon after his arrival at the request of Dr. McLaughlin, the attending physician of the hospital, who, with others, assisted me in the amputation of the foot and the dressing and splinting of the opposite fractured thigh. This cut, taken from a photograph of him, shows his present condition.

The wounds were thoroughly irrigated with a mercuric chloride solution and wrapped with cloths saturated with the same, before operative interference was attempted, with the hope of lessening the inevitable septic infection which would follow the amputation of the foot.

For the first two or three days the temperature was 101° to 102°; on the third day it ran up to 103.5° F., and the removal of the dressing discovered a superficial gangrene not only of the amputation wound, but also of the wound at the seat of the fractured femur. I should state that, after the Pirogoff amputation had been dressed, six or eight pieces of bone were detached and removed from the broken femur. To do this the wound was sufficiently enlarged. and large counter-openings made for drainage. All the crushed muscle was cut away with curved scissors and knife. On opening the wounds on the third day they were covered with soft pultaceous and gangrenous masses; but the general condition of the patient was encouraging, and he was not depressed. I have seen cases after amputation presenting this appearance and in which I used formerly to apply creasote, and afterward a strong solution of carbolic acid, and I have seen this pultaceous, gangrenous coating of a wound clean off nicely in a few days under the use of such applications. So after cutting away with curved scissors most of the gangrenous surfaces, I mopped the parts with a concentrated solution of carbolic acid, then irrigated them thoroughly, and poured balsam of Peru liberally into the wounds, applied oakum, and completed the dressings. Tincture of muriate of iron in fifteen-drop doses, every three hours, and brandy and liquid nourishment were freely given.

The patient progressed favorably toward cure. After a few months a piece of dead bone was removed by incision, and the sharp spoon or curette was freely used.

To-day this man is a living example of what may be accomplished by an intelligent resort to free and bold incision to favor drainage, and to the liberal use of balsam of Peru to stimulate granulations.

SOUTHERN CALIFORNIA AS A WINTER RESORT.

BY HENRY C. ALLEN, M.D.,
OF LOS ANGELES, CAL.

To those persons who suffer from pulmonary complaints, or are otherwise in delicate health, the climate of the Eastern States is most trying, and too frequently fatal. Extremes of atmospheric conditions and radical changes of temperature succeed each other with a rapidity which is a source of danger to even the healthy and robust.

As winter approaches, physicians begin to consider where to send their more delicate patients to escape the rigor of an Eastern climate, and it is not always an easy matter to decide upon a locality which will not only secure immunity from actual danger, but at the same time prove beneficial and restorative to the patient.

There are very few places within reach that combine *both* of these desiderata. Colorado possesses some undeniable advantages, from a sanatory point of view, but its climate is subject to thermal changes almost as marked as in the New England States, and therefore not generally suitable to patients whose lungs are more or less affected.

Florida, as regards temperature, is recommended for its greater equability; but the sojourner in that section of the country is exposed to malarial influ-

ences, with all its febrile concomitants, and not infrequently to the scourge of yellow fever.

Nassau possesses many advantages for phthisical sufferers, but its deficient means of communication with the outside world has a tendency to give rise to a feeling of isolation from friends and loved ones at home, which is apt to detract greatly from that mental repose so necessary for the invalid.

The Catskills, the Adirondacks, and other mountain resorts are available only in the summer season, and can offer nothing but disadvantages at the period of the year when they are most needed.

Southern California is a region which possesses every desiderata that can be imagined for invalids. Its climate is wonderfully equable, the temperature varying few degrees above or below 70°; the greater portion of rainfall occurs at night, leaving the days clear and sunshiny. This peculiarity alone secures the advantages of out-door life, with an atmosphere abundantly supplied with ozone, so necessary and beneficial to the mind and body. The softly tempered sunshine is a perpetual tonic, and the bright and clear atmosphere inspirits and invigorates.

Therapeutically, the climatic conditions in Southern California are three-fold, combining in one region the choice of sea-coast, foot-hills, and mountains, each possessing its own distinctive advantages.

The coast extends from Santa Barbara to San Diego, both beautiful places and splendidly located. San Diego has the double advantage of being situated at the base of the foot-hills and also on the coast. The distance between these two places is about 300 miles, the intervening coast being diversified by attractive towns, affording constant change of scene and easy transit. These places are eminently favorable to invalids, as they are pervaded with a restful quiet, and at the same time offer pleasant social attractions.

Here, frost is extremely rare, and snow is unknown nearer than the highest peaks of the mountains. Day follows day of bright sunshine, never sultry, with a temperature varying very few degrees of daily, monthly, and yearly average.

Twelve out of the twenty-four hours can be daily spent out of doors, basking in the sun's rays, and inhaling the invigorating and health-giving ocean breeze, which is constant and regulated by the temperate waters from the coast of Japan.

This is a very paradise for the dyspeptic sufferer. The vitalizing effects of open-air life, and the great variety of food abundant at all seasons of the year, soon restore appetite and digestion to their normal condition.

Here, the weak or exhausted nervous system or over-taxed brain will soon respond to the tonic and bracing surrounding influences, with a result unattainable by drugs or artificial restoratives.

The foot-hills and the mountains offer the therapeutic conditions of dryness and atmospheric rarefaction in proportion to their distance inland, and their elevation above the sea level. These conditions are the most favorable for those suffering from malarial complications; the air is dry and pure, and the entire absence of dampness and night-dews precludes the deadly decomposition of organic matter; there is, therefore, nothing to promote malarial, remittent or intermittent fevers; on the contrary, every condition is favorable for the complete eradication of such diseases.

All these advantages of sea-coast and mountain are within easy reach of the beautiful city of Los Angeles. Along the foot-hills, from Pasadena to San Bernardino, numerous *sanitaria* are to be found, well appointed and pleasantly located; and the various mountain resorts, such as Arrowhead, Beaumont, Switzers, etc., offer health and comfort to all who visit them.

The scenery of Southern California is beautiful and ever varying; the air is exhilarating and invigorating. To those who need or desire it, there is ample opportunity for mountain-climbing with all its resultant benefits, expanding the chest, exciting respiration, increasing muscular vigor, and sending the blood bounding through the capillaries, giving tone to the system, firmness to the flesh, and health to the invalid, making the weak strong and the strong robust.

Suitable climate is a paramount necessity for invalids, but the accessory advantages of social surroundings are quite as important; in order to obtain the maximum benefit of climatic influences, mental repose and pleasant companions are indispensable. Many an invalid, who leaves home and friends to regain at some distant resort the health which is denied him among those who are dear to him, finds himself among strangers, from whom he fails to derive the sympathy and attention that his state of health requires; he becomes despondent, and returns home unbenefited and blaming the resort for his unimproved condition. To those who are unable to be accompanied by friends or relations in their search after health, the hospitality and social temperament which pervade Southern California generally will go very far to remove the sense of loneliness and consequent yearning after home that oppresses the mind and retards physical recuperation in most of the hygienic or sanatory resorts.

It is scarcely necessary to enumerate the special diseases for the cure or alleviation of which Southern California seems specially adaptable; the advantages of that region are so numerous, that profes-

sional men will have no difficulty in discrimination of locality, the variety and choice in that region being both varied and comprehensive. It is emphatically one of the most favored spots on earth for the delicate, the consumptive, the exhausted brain-worker, and all whose systems have become impaired either by insidious disease or overtaxed energies. In the cities and larger towns, scores of persons can be met whose condition, when they first arrived, was such that they could scarcely walk, but who are now able to live an active life, and are engaged in business pursuits.

MEDICAL PROGRESS.

Massage in Rickets.—DR. SILFVERSKIÖLD speaks very favorably of massage in the treatment of rachitis. He begins with the lower extremities, using considerable pressure in a direction from below upward, and making energetic passive movements of the ankle-, knee-, and hip-joints. He then passes to the abdomen, thorax, neck, and upper extremities, exciting increased respiratory movements by making pressure on the chest. Each *séance* lasts for from ten to fifteen minutes, and the treatment is continued through a period of from four to six weeks. At the beginning, the patient usually complains of pain during the manipulations, but this soon passes away. The author claims to have obtained excellent results in a number of cases.—*The Medical Record*, October 5, 1889.

A New Cardiac Remedy.—The alkaloid discovered in the common gorse, "whin," or furze, of Europe (*Ulex Europæa*), termed ulexine, is of a most powerful character. It appears to arrest all voluntary movements and reflexes by paralyzing the motor tract of the spinal cord and the trunks of the motor nerves. The heart muscle is paralyzed, though preliminary thereto there is an increase of arterial pressure. Further, it possesses a diuretic action similar to that of caffeine, but more definitely marked.—*The Medical Age*, September 25, 1889.

Treatment of Phthisical Night-sweats.—As one of the most unpleasant and, at the same time, most frequent symptoms of pulmonary phthisis is nocturnal sweating, the recommendation of DR. B. ALEXANDER, in the *Deutsche medicinische Wochenschrift*, September 12, 1889, that hypodermatic injections of the officinal camphorated oil be made in such cases seems worthy of note, particularly as he states that he has derived very encouraging results from it. We should think, in view of the fact that camphor is capable of acting very powerfully upon the human body in moderate amount, and is also locally irritant, that such treatment might not be entirely devoid of danger, although it may prove worthy of employment when care is exercised.

Treatment for Chronic Leg Ulcers.—DR. IVAN A. PRAXIN, of St. Petersburg, warmly recommends a simple method of treatment, successfully practised by him in atonic crural ulcers with sclerotized edges. The method consists in making multiple radiating incisions, penetrating through the whole thickness of the edge, and situated so that the inner third of each incision divides the granulating bottom of the ulcer, the middle one its edge, and the outer third the adjacent healthy skin. The distance between the incisions should be equal approximately to two or three breadths of the edge. To secure gaping, plugs should be inserted into each wound for a few days. When treated after this plan, callous ulcers, varying in size from a penny piece to a half of the palm, are said to heal as swiftly as any simple ulcer, provided their neighborhood is free from inflammatory œdema and venous congestion.—*Weekly Medical Review*, Sept. 28, 1889.

Ventro-fixation of the Uterus.—DR. THIRIAR publishes in *La Clinique* an instructive clinical lecture delivered to his class at the Hôpital St. Jean, Brussels, on Ventro-fixation for Prolapsus Uteri. The term he proposes to use for the operation is "hysteropexy," from ὑστερον (the uterus) and πηξις (fixation). The condition of the patient, an elderly woman, who had been suffering from complete prolapse for the last eight years, were such as to render all exploratory and operative procedures per vaginam difficult in the extreme, as she had ankylosis of the left hip, the thigh being fixed in an adducted position. There was a good deal of pain, and the uterus was visible on the outside of the vulva even when the patient was lying down. Pessaries had been tried, but were productive of no benefit. Under these circumstances it was determined to perform hysteropexy. The abdomen was opened in the linea alba between the symphysis and the umbilicus, and the uterus drawn forward and fixed to the lips of the wound by three points of strong catgut suture, an iodoform dressing being subsequently applied, which was renewed in a week's time. Seventeen days from the time of operation the wound was healed, and the uterus could be felt high up and firmly fixed, so that the patient might be considered cured. She was, however, kept in bed for three weeks longer, when the uterus, being still firmly fixed, she was allowed to get up. Unfortunately, a fortnight later the prolapsus returned, but no pain or dragging was felt. The only thing to be done was to give her a cup pessary and to discharge her as incurable. In his remarks upon the case Dr. Thiriar pointed out that the operation was a new one, and a good deal more experience was needed to determine the best method of performing it. He does not think Caneva's plan of cutting down to the peritoneum and suturing the parietal and visceral layers of peritoneum together a particularly practical one, as it prevents exploration for adhesions and removal of uterine appendages, if necessary. The plan adopted in this case was that of Leopold, except that catgut was substituted for silk, and no scraping of the epithelial layer of the peritoneum for the purpose of assisting the formation of adhesions was practised. The difficulty of fixing the uterus permanently to the abdominal wall is considerable. Müller, of Berne, who amputates the uterus and sutures the stump to the lips of the abdominal wound, has found the adhesions break down and the prolapsus recurs. Altogether Dr. Thiriar is not disposed to view hysteropexy with much favor—at all events when performed by itself—though he thinks there may be cases where the prolapsus is accompanied by hypertrophic elongation of the cervix, by rectocele or cystocele, where, as an adjunct to some other operative measure, it may

prove of value. He suggests that the chances of obtaining a permanent adhesion between the abdominal wall and the uterus would be increased by treating the uterus as Juffier treats the floating kidney—*i. e.*, by peeling off the peritoneum from a considerable surface, which is then sutured to the abdominal wall. A lesson which this case teaches is not to be in too great a hurry to publish results.—*The Lancet*, September 28, 1889.

Cocaine Poisoning.—Dr. Vinogradoff gives, in the *Ejenedêlnaya Klinicheskaya Gazeta*, an account of the post-mortem examination in a well-known and remarkable case of cocaine poisoning, where a young woman, who was suffering from a tuberculous rectal fistula, was given twenty-two grains of cocaine by means of repeated rectal injections in order to produce local anæsthesia for an operation which consisted in scraping the anterior wall of the rectum with a sharp spoon. In a quarter of an hour the patient became excited, and began to suffer from clonic spasms in the limbs, opisthotonos, and cyanosis. Death occurred from asphyxia, in spite of tracheotomy and prolonged performance of artificial respiration. At the post-mortem examination the blood was found to be fluid, and of a dark-brown color, as in cases of poisoning with chlorate of potash. There were hyperæmia of the brain and of the lungs, exudative glomerulonephritis, evidently of long standing, together with ulceration of the colon and rectum, reaching down to the submucous tissue. Microscopically, there was found albuminoid degeneration of the nerve-cells, of the cerebrum, of the heart muscle, of the liver-cells, and of the epithelium of the urinary tubules. Dr. Vinogradoff compares this with three other published cases of death from cocaine poisoning, and with cases in which large doses had been given with and without the occurrence of toxic symptoms, and shows that as much as forty-five grains have been given without any ill effects. The fatal result in the foregoing case—which led to the suicide of the surgeon who operated—is to be ascribed to the increased power of absorption of the ulcerated intestinal wall, and to the retardation of the kidney secretion by the diseased condition of the glomeruli. It would, therefore, appear that when there is any question of giving large doses of cocaine a careful examination should be made of the condition of the kidneys, and if there is any ground for supposing them to be diseased or functionally inactive the greatest caution should be employed. It may be remembered that before operating the unfortunate surgeon asked one of his colleagues, who was a professor of therapeutics. what dose of cocaine might safely be given, the answer being, "Not more than two grains." So that the greatest diversity of opinion exists regarding the maximum dose of the drug.—*The Lancet*, September 28, 1889.

Pathology of Severe Burns.—Dr. Oscar Silbermann, of Breslau, studying the clinical and pathological signs of the destruction of numerous red-blood corpuscles, found by his experiments: 1. That after extensive burns of the skin the red blood-corpuscles alter their form and lose their power of resistance to heat, drying, compression, and staining. 2. In consequence of these alterations numerous thromboses in the arterioles and capillaries, especially in the finer branches of the pulmonary artery, occur, leading to stasis in different organs—*e. i.*, lungs, kidneys, stomach, bowels, liver, spleen, skin, and brain. 3. The large distribution of the pulmonary capillary circulation produces a considerable impediment to the emptying of the right heart, and serious venous congestion as well as dangerous arterial anæmia. 4. This state, coupled with the above-mentioned symptoms, leads to bleeding and parenchymatous alterations in the affected organs. 5. The interference with the circulation also produces dyspnœa, a small pulse, angina, eclampsia, and anuria, as well as a remarkably low temperature.—*The Lancet*, September 28, 1889.

Pea Soup as a Substitute for Beef-tea.—Dr. Ris, of Kloten, Switzerland, says *The British Medical Journal* of September 28th, emphatically recommends pea soup as an excellent substitute for beef-tea for invalids, convalescents, and more especially for patients suffering from cancer of the stomach, or diabetes mellitus. Take peas, water, and sufficient amount of some vegetables suitable for soup; add one-half per cent. of carbonate of soda; and boil the whole until the peas are completely disintegrated; then let the soup stand until sedimentation is complete, and decant the fairly clear thin fluid above the deposit. The product is stated to resemble a good meat soup in its taste, to be at least equally digestible, and, at the same time, to surpass the very best meat soup in nutritive value. The latter statement may appear surprising, but the author reminds us that peas (as well as beans or lentils, either of which may be used instead of peas) contain a considerable portion of legumen—that is, a vegetable albumen which is easily soluble in a faintly alkaline water, is not coagulated by heat, is easily absorbed, and equal to the albumen of eggs in its nutritiousness.

The Microbes of Tumors.—Dr. Verneuil's conclusions as to the presence and influence of pathogenic microbes in tumors are as follows: Tissue of new formation of a malignant character, such as cancer, sarcoma, epithelioma, may at a given moment contain different microbes, of which neither the origin, kind, nor quantity can be accurately determined. The presence of these microbes may for a long time be innocuous, but, on the other hand, in some cases results in the rapid increase in softening and ulceration of the tumor. Microbes are not found in lipoma, fibroma, nor in cancers and sarcomas characterized by an initial slow development, but are almost always detected in softened and ulcerated tissue. These microbes, besides exercising a morbid influence on the surrounding tissues, affect also the general economy, and constitute a febrile element. During excision of the morbid growth, they are communicated to other parts of the wound, and are capable of provoking septicæmia, which may prove fatal.—*The British Medical Journal*, September 28, 1889.

The Choice of Operations for Vesical Calculus.—In an article in the October number of the *University Medical Magazine*, Prof. D. Hayes Agnew reaches the following conclusions:

First. All cases of vesical calculus in patients over fifteen years of age, with sound urethras, and in whom the stone is not too large nor too hard, should be treated by litholapaxy.

Second. All children under fifteen should be treated by lateral lithotomy.

Third. In the case of very large stones, suprapubic lithotomy should be substituted for either litholapaxy or perineal lithotomy.

Fourth. In adults, where perineal lithotomy becomes necessary, the median operation is to be preferred, provided the stone does not exceed three-quarters of an inch in diameter.

A Case of Nutmeg Poisoning.—On August 14, 1889, DR. AMOS SAWYER, of Hillsboro', was called to see a boy aged three. He found the little patient with a normal temperature and respiration; pulse regular, but a little slow; all the muscles completely relaxed. An attempt to arouse him failed, his head falling in whichever way the body inclined. An examination of the pupils revealed complete dilatation. Dr. Sawyer felt certain that this condition was the effect of something that the child had eaten, and, upon inquiry, was informed that he had, unknown to his mother, appropriated from her spice-box five large nutmegs, which he informed his little sister was his tobacco, and which by noon he had managed to consume, presumably spitting out the bulk of the spice. About 2 P.M. he complained of feeling dizzy and soon fell asleep, and they had been unable to arouse him. He had had one movement from the bowels, and had urinated twice while in this condition. There had been no delirium. He recovered consciousness as if awakening from a natural slumber, but with the greatest dislike for nutmegs, after having slept thirty consecutive hours.—*New York Med. Journal*, September 28, 1889.

Poisoning by Tansy.—The following case is reported in the *Medical Record* of September 28th:

"Mrs. K., not having her menses for some five weeks, thought herself pregnant, and not wishing to have any more children followed a neighbor's advice and set about taking five drops of the oil of tansy every few hours. Not succeeding in bringing about her menses, she took about one drachm on sitting down to breakfast. She felt no unusual symptoms for about a half-hour, when a 'dizzy sensation' came over her. She ran out doors, and a moment later was picked up by her husband in convulsions resembling epilepsy. There were present spasmodic contractions of the limbs, frothing at the mouth, and unconsciousness. The physician found her in this state, with a thready pulse, very intermittent, respiration scarcely perceptible, and cyanotic. Thinking there was enough food in the stomach from her breakfast to hold a good part of the oil yet unabsorbed, he administered apomorphia muriate, gr. $\frac{1}{10}$, hypodermatically. In a few moments she vomited very profusely, there being a great amount of gastric juice. After this she revived by repeated doses of brandy, but did not regain her consciousness for two or three hours. She remembered nothing about what had happened. Her tongue was lacerated, as is often seen after a severe epileptic fit, the pulse ran up to 120, and temperature to 101° F. for the rest of the day. Headache persisted for three days, and fainting every three or four hours for two days. The menses made their appearance, but not from the action of the drug, for she was nursing a child about six months of age, and they had been irregular. There were no signs of an abortion."

Fatal Result of a Wasp Sting.—The following case is reported in the *British Medical Journal* of September 21st:

A farm laborer, aged twenty-eight, was stung on the right side of the neck by a wasp, on August the 29th. He took no notice of it; but the next day, late in the evening, both sides of his neck began to swell, and on Saturday, the 31st, things looked so serious that a physician was sent for. He found the neck, cheeks, lower jaw, and even the pectoral muscles attacked with acute cellulitis. Careful inquiry elicited the fact of the wasp sting, and that when he received the lesion he had a boil under his left ear: also that, though a very healthy looking and well-nourished man, he was sadly troubled with constipation, and a member of a family among whom boils and abscesses were very common—thus evidently showing a natural tendency to suppurative mischief. The treatment consisted of the use of antiseptics both internally and externally, hot poultices, milk *ad libitum*, stimulants as far as could be tolerated, and plenty of fresh air; but, in spite of all, septicæmia, with violent rigors and delirium, supervened on the sixth day, and he died on the ninth day after the reception of the sting. No abscess formed, but the cervical tissues were very much indurated. August 29th was a very hot day, and, following as it did a period of rainy weather, the conditions were very favorable to the rapid decomposition of dead organic matter, whether animal or vegetable, and it is highly probable the wasp may have been feeding on some putrescent material previous to stinging the unfortunate man. As he had nothing whatever to do with the cattle, and as all the horses and cattle on the farm where he was employed are quite healthy, it is clear this was not a case of anthrax or malignant pustule, but death due to a wasp sting received when the system was not healthy.

Styrone, an Antiseptic.—We read in the *Medical Age* that styrone is again coming into use as an antiseptic. DR. H. A. A. BEACH was first to call attention to it in 1879; its cost, however, then precluded its extensive use. It now can be prepared at a reasonable figure and bids fair to enter into competition with other antiseptics. Styrone is a compound of styrax and balsam of Peru, and it is said to be especially valuable on account of its efficiency, non-poisonous character, and agreeable odor.

Lemon-juice in Epistaxis.—DR. FANCHON, in the *Revue Géneral de Clin. et de Thérap.*, speaks most highly of the value of lemon-juice for the local treatment of stubborn nose-bleed, In one case, in which the hemorrhage was most severe, and in which plugging of the anterior nares had been resorted to without avail, a single injection of lemon-juice made, with the aid of a glass syringe, into the nostril that was bleeding, immediately arrested the hemorrhage.

Transplanting of a Chicken's Cornea.—DR. GRAVENIGO, of the University of Padua, is said to have successfully performed an operation which hitherto has been vainly tried by various experimenters, both in France and elsewhere. The operation consists in the grafting of a chicken's cornea into the human eye. In the successful case reported by Gravenigo the graft is said to have united quickly and formed a cornea which was very transparent, shining, and convex.—*Le Progrès Méd.*, July 13, 1889.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,
PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, OCTOBER 12, 1889.

MASSAGE OF THE HEART.

OERTEL'S mountain treatment of valvular disease has shown no signs of becoming popularized, at least in this country, where other and safer means of improving cardiac tone are wisely preferred. Benefit from hill-climbing undoubtedly accrues to some patients, and results partly from the general hygienic measures also employed, namely, open air, cheerful surroundings, and carefully selected food; partly also from the direct stimulating effect of exertion on the circulation. These useful features, great as they certainly seem, are overbalanced by the risks of dilatation and exhaustion of an already tired heart, dangers by no means theoretical.

Arrayed against Oertel are Liebenstein, Nothnagel, Lichtheim, Schott, Lépine, and Loomis, who have expressed themselves in more or less positive terms, Schott reporting several cases in which the treatment was of decided injury. Da Costa does not seem to have considered the method worthy of trial, and in his paper before the Association of American Physicians (*Amer. Journ. Med. Sciences*, Nov. 1888) says that his experience with valvular disease in the mountainous regions of Colorado would not incline him favorably to it. Franz, Hausman, Barr, and others who favor the treatment, do so guardedly and for selected cases only. No one has denied that with the dangers eliminated the method would be of value. Oertel now claims to have discovered, in what he terms massage of the heart, a safe method of attaining the same nutrition and circulatory improvements as in hill-climbing.

Donders long ago, in studying the effects of respiration on the circulation and heart, demonstrated that expiration aided the cardiac systole. Oertel's new method is largely based upon this fact, and might be termed an adjunct to expiration. The method, as described in his first paper in the *Munch. med. Wochenschr.*, Sept. 10, 1889, consists in the *masseur* placing his hands on each side of the patient's thorax at the height of the fifth or sixth rib. At the beginning of expiration firm pressure is made while moving the hands obliquely to the ensiform cartilage, the movement occupying the entire expiratory period. This pressure evidently must cause a more complete expiration than normal, which assists the heart in systole, hastens the blood current, and renders oxygenation more perfect. The direct pressure on the surface of the heart must in many patients be extremely slight, though Oertel considers it an important factor. In some cases use is made of prolonged expiration on the part of the patient.

Following this semi-artificial expiration is an increased inspiratory effort which in its turn aids the cardiac diastole. The blood current being accelerated and oxygenation rendered more perfect, it follows that nutrition is improved, not only of the entire system, but of the cardiac walls. This, in brief, is the theory and practice of Oertel's new treatment of failing heart power. Theoretically, there is a possibility of the prolonged inspiration dilating a weakened heart; practically, we think the danger may be ignored in all but the most advanced cases.

As yet, Oertel has made no comments on the use of drugs in connection with this treatment, but we cannot see why any of the cardiac tonics should not be used. The method is based on sound physiological principles, and seems worthy of careful trial. Oertel's standing in the profession renders it necessary that attention be paid to his statements, and we hope that the profession on this side of the water will at least give it a fair trial.

CARBOLIC ACID.

WITH the characteristic perversity of the law, we have a condition of affairs in the State of Pennsylvania which forbids druggists to sell to irresponsible parties substances which are known to possess distinctly poisonous properties, and yet it may be said

that many of the drugs included in this far-reaching law do not possess very distinct toxic power unless taken in large quantities.

Either because our legislators came to the conclusion that it would be well for the people in general to become easily possessed of carbolic acid for the purposes of disinfection, or because they were ignorant of the fearful power which it possesses as a poison, this substance is at present allowed to be sold by any one and to any one who may ask for it. As a consequence, within the last few years the number of cases of poisoning by this acid have very largely increased, and instead of such suicides becoming medical curiosities, they have ceased to attract the general attention which was given them when it was first resorted to.

Considering that carbolic acid has been proved by researches of the committee appointed by the American Public Health Association to be a substance far inferior to many others in germicidal power, and in view of the fact that it is, with one exception, perhaps the most rapidly acting poison known, we think that some law in regard to its sale should go into effect as soon as possible. That the acid is capable of acting with extraordinary rapidity if taken in large amount has not only been proved by a large number of cases on the continent of Europe and in England, but has found ample substantiation in those cases which have occurred in this country. Two of these cases with which we are acquainted emphasize this point very well. One was that of a marine hospital steward who, by mistake, swallowed an unknown quantity of the acid. He was heard to groan, step out of a small room, fall senseless in the passage-way, and was dead inside of three minutes. Still another case, occurring in this city, was that of a man who entered a drug-store, bought a vial of carbolic acid, tossed its contents down before he could be stopped, strode to the door of the store, and dropped dead on the step. That the profession is beginning to recognize the frightful power of this drug is evidenced not only by the cautions which are now given by physicians to their patients when directed to use it, but also by the articles which from time to time appear in the current medical journals. At the same time there are several text-books, one or two in particular for distribution among the laity, which recommend carbolic acid highly for its antiseptic powers, and its use in drains and cesspools, but contain no word of warning as to the character of its action when taken into the body, nor any reference to the antidotes which should be employed in case the poison be swallowed. A sufficient number of cases of poisoning by carbolic acid have occurred in the United Kingdom to force the medical profession in Ireland to request that the acid be placed upon the list of poisons. To this end the President and Fellows of the King's and Queen's College of Physicians in Ireland have requested the Privy Council to take such action as will necessitate more care in its general sale. It is customary in some places to require druggists, when selling a poison without a physician's prescription, to include, upon their labels, a brief account of the treatment which should be instituted should mistakes be made as to the contents of the bottle. Even supposing it is impossible to pass a law which will control the sale of this and similar drugs sufficiently to prevent persons with suicidal tendencies from using it, it might be well for druggists to be instructed to recommend, by a label, Epsom or Glauber's salts as the proper antidote to be employed, and to warn purchasers that great care should be exercised that children and other irresponsible persons should not be allowed to handle it.

THE TREATMENT OF HEPATIC ABSCESS.

THE interesting case of liver abscess reported by DR. TOMPKINS in the current number of THE NEWS, suggests some observations in regard to the recent advancements in the surgical treatment of this affection. The ideas of surgeons have, in the last few years, become fairly well crystallized in regard to the treatment of abscess affecting the liver. Although a great variety of means for relief are to be found in the standing text-books, the writings of more modern investigators point to the earliest possible incision as being, beyond all others, the most successful treatment. Thierfelder's interesting statistics give absolute proof of the justice of this opinion.

For the proper application of this principle an early diagnosis is absolutely essential. The typical symptoms of abscess are rigors, fever, tenderness over the liver, pain which is often referred to the right shoulder and is severe in character, steady emaciation, and rarely jaundice, together with the appearance of a tumor in the hepatic region.

The prognosis, if no surgical treatment is instituted, is exceedingly grave. Contrary to the accepted doctrine that pus points outwardly, it is as prone to discharge into the lungs, stomach, intes-

tines, or peritoneal cavity as to find its way to the surface. The case reported is an instance of this, the abscess pointing toward the surface and into the intestine.

Where typical signs are present, or where there is suspicion that liver abscess has formed, or is forming, the surgeon should at once perform an exploratory laparotomy; if swelling is present, the incision should be made over its most prominent part. If this important guide is absent, the incision should begin at the costo-chondral articulation of the tenth rib, and be carried directly downward in the long axis of the body. If the surgeon fears that his antiseptic precautions or his manual skill are not sufficient to prevent the entrance of microörganisms or blood into the peritoneal cavity, he can satisfactorily explore the liver surface by Bardenheuer's, or the so-called extra-peritoneal incision—that is, the knife may be carried down to, but not through, the peritoneum. The latter may be stripped from the parietes, and the fingers may be carried over nearly the entire surface of the liver with the interposition of only a thin membrane. In this way swellings, irregularities in surface, or fluctuation can be readily discovered.

If adhesions have not formed between the liver and peritoneum, the surgeon should suture these two surfaces together, and then, having so placed his threads that the peritoneal cavity is absolutely protected against the entrance of pus, should freely incise the abscess cavity, and should make ample provision for drainage.

Where, in spite of the use of large tubes, pus accumulates, the cotton ropes should be employed; these should be carried to the bottom of the drainage tubes, and removed every half hour or hour, if necessary. Under this treatment, the prognosis is exceedingly favorable. The liver heals with remarkable rapidity, sometimes an extensive abscess cavity being closed in a few days. Even though there be multiple abscesses, the evacuation of the principal cavity lessens pressure in this region to such an extent that the smaller abscesses will probably rupture spontaneously in the same direction. At the time of operation the surgeon should carefully explore for secondary abscesses, and, if found, should, by means of his finger or the point of a blunt instrument, break through the walls separating them from the major cavity.

In regard to the etiology of the case reported by Dr. Tompkins, it is unfortunate that, at the time of the autopsy, the large intestine and rectum were not examined. Although so-called spontaneous liver abscess has occurred, and the traumatic form is well recognized, by far the most common variety is that due to septic matter carried from the rectum or large intestine. A history of preëxisting diarrhœa or dysentery is almost conclusive evidence that this is the cause of abscess formation. It also suggests the probability of the abscess being multiple, and indicates that there should be made, not merely an incision, but a thorough exploration, with the idea of evacuating all the pus which the liver contains.

There have been many cases successfully treated by means of aspiration, but both statistics and anatomical reasoning would strongly indicate exploratory laparotomy. We can never be sure, unless superficial signs of inflammation are present, that the liver is adherent to the parietes. Any puncture into this organ would, if such adhesions had not taken place, expose the patient to the risks of septic peritonitis. Thorough evacuation, either through the canula or aspirating needle, is absolutely impossible, and the surgeon is left in ignorance as to the existence or non-existence of more than a single abscess.

Under any circumstances laparotomy can do no harm, and in the majority of instances it leads directly to the saving of life.

FISH POISONING.

During the past few years, through the labors of Brieger, Vaughan, Semi, Nencki, Gautier, and a host of lesser lights, our knowledge of food poisons has greatly increased, and the explanation of those instances in which a number of individuals are simultaneously seized with toxic symptoms after partaking of a particular article of food is no longer sought in the cooking utensils or in intentional adulteration. Among the staples which are known to have frequently caused poisoning are fish, and in countries where they form a large part of the food consumed, it has been recognized for centuries that by them poisoning would occasionally be caused, some species being more dangerous than others. This was usually explained by the supposition that the fish subsisted on food deleterious to man, or that they possessed inherent poisonous properties. So far as is now known, certain members of the family Scoparænidæ, and during spawning a few varieties of herring, alone are toxic *per se*, and

it is not proved that any species live upon food poisonous to man—putrefactive changes, with the development of those subtle compounds named by Selmi the ptomaines, being the toxic agents in the vast majority of cases.

In the *Lancet* of September 21st Lawrence-Hamilton, taking as his text "Ice Spoils Fish," reviews in detail and with many practical comments, the entire subject of preserving fish for the market—a subject of great and growing importance to physicians, for the belief that many of the acute intestinal disorders are in reality cases of ptomaine poisoning, and, therefore, preventable diseases, is steadily gaining ground. In this country more attention has been given to poisoning by milk and cheese; but when we stop to consider the methods by which fish are preserved from the time they leave the water, the ease with which they putrefy, and the great numbers consumed in all seasons, the hygienic importance of the subject can scarcely be overestimated. According to Lawrence-Hamilton, the proneness of fish to decomposition is due to the fact that, differing from mammals, all their tissues, including the blood and lymph, contain bacteria, and also to their readiness to absorb water when dead—water in most cases filthy from long-used boxes, baskets, vessel-holds, and market counters. Further, slight damage to the surface or bruising of the flesh opens a channel for the entrance and multiplication of putrefactive bacteria. This latter fact is so well recognized that in Great Britain railway transportation reduces the market value of fish twenty-five per cent. We can hardly believe with Lawrence-Hamilton that all chemicals, including common salt, are valueless as preservatives. Salt in sufficient quantities certainly preserves most fish, although Boehm has stated that in Russia poisoning with salted sturgeon is more frequent than with the fresh fish. That ice spoils fish is probably due more to the fact that it gives a false sense of security than to other reasons; although, as every housewife knows, all meats spoil more quickly *after* having been on ice. It is the moisture, maceration, and bruising that cause this tendency, for both meat and fish may be kept for long periods in a cold, *dry* atmosphere.

The prophylactic measures suggested by this review of Lawrence-Hamilton's paper are: First, to free the flesh as much as possible from putrefactive bacteria; all fish should be bled and gutted immediately after catching. "What butcher would dream of cutting meat from an ungutted or unbled carcass?" By the Scandinavian fishermen this is done, but in Great Britain and this country, we are informed by dealers, fish are shipped to market as taken from the water.

Secondly, that they should be transported with great care and freedom from bruising, and kept in a cold, dry air, such as is now furnished with several kinds of refrigerators. How far these measures are complied with is demonstrated by a few moments in any fish market.

The time is rapidly approaching—unfortunately for us, more slowly in this country than in many others—when medical thought will be directed as much to the prevention as to the cure of disease, and governments will be compelled to recognize and act upon wise prophylactic suggestions. When that time arrives stringent laws will protect the consumer from careless dealers; until then it is our duty to educate our patients to the dangers threatened by improperly preserved foods.

REVIEWS.

The Physicians' Library. Disordered Digestion and Dyspepsia. By Frank Woodbury, A.M., M.D. 12mo. Detroit: George S. Davis, 1889.

This paper-bound book is one of 77 pages, written by a former teacher in one of the medical schools of Philadelphia, who has placed the entire subject of gastric disorders, at least in their functional forms, with sufficient clearness to be readily understood, even by persons possessing very little medical knowledge. It contains chapters on "Digestion and its Disorders," the "Symptoms and Forms of Dyspepsia," "Treatment of Dyspepsia," and "Dietetic Hints for Dyspeptics." In the preface a brief review of the recent scientific changes in regard to gastrionic disorders is given, and scattered through the book are several tables giving differential diagnoses which aid in the separation of disordered states quite well.

The book is printed in the same style as the rest of the series, and while it lacks the thoroughness which the subject might be thought to command, and pretends to no originality, it will probably prove valuable to many physicians in giving them useful hints.

The Story of Bacteria, and their Relations to Health and Disease. By T. Mitchell Prudden, M.D. 12mo. New York: G. P. Putnam's Sons, 1889.

As stated by the author in his preface to this little volume, his chief aim has been to present the main features of the life-history of bacteria in such a form that the layman may readily understand them.

Difficult as is the task of writing or speaking upon an abstruse scientific subject in terms that are not too technical for the medically uneducated mind to grasp, the author has admirably succeeded in not only placing in

simple and readily comprehended language the "story of the bacteria," but has so clothed the plain narration of facts in the garb of fiction that in places the book reads almost like a fairy tale. After describing some of the more generally understood and more easily appreciated facts of biology, he leads the reader by easy stages toward the comprehension of the more intricate parts of the subject, Even the relation of phagocytes to bacteria is so touched upon in non-technical terms that he conveys to the reader a distinct idea of the outlines of the processes involved, without becoming too deeply surrounded by technicalities.

Probably the chief merit of the book, apart from the interesting character of its contents, is the manner in which the author deals with the *rôle* played by bacteria in various preventable diseases, deducing therefrom the well-understood, but little heeded, prophylactic measures that should be adopted.

The author has fulfilled his task well in producing a brochure that will be read not only with interest by physicians but also with understanding by the unprofessional reader.

Handbook of the Diagnosis and Treatment of Diseases of the Throat, Nose, and Naso-pharynx. By Carl Seiler, M.D. Third edition, thoroughly revised and greatly enlarged. 12mo., pp. 374. Illustrated with two lithographic plates and wood engravings. Philadelphia: Lea Brothers & Co., 1889.

Ten years ago the first edition of this little book appeared in the market, and the fact that already two editions have been exhausted proves that, though it deals almost solely with a special subject, it has, nevertheless, met with the approval of the profession. The book is enhanced in value very considerably, at least to the tyro in laryngology by the handsome lithographic illustrations which it contains, also by the unusually clear engravings which are scattered profusely through the work. The instruments which are to be employed by the specialist in this branch of medicine are also clearly portrayed. In regard to the book itself, we think that it is unusually clearly written, and that a very large amount of valuable information has been placed in a small space between its covers. Attention has been paid in a thorough manner to the rapidly increasing employment of electricity in the treatment of the diseases commonly seen by persons operating on the throat and nose.

SOCIETY PROCEEDINGS.

AMERICAN GYNECOLOGICAL SOCIETY.

Fourteenth Annual Meeting held at the Institute of Technology, Boston, Mass., September 17, 18, 19, 1889.

Third Day—Thursday, September 19th.

Morning Session.

Although Dr. A. Martin, of Berlin, was absent, his paper entitled

THE RELATION OF UTERINE RETRO-DEVIATION TO PREGNANCY

was read.

The condition of retro-deviation of the uterus was especially significant with reference to pregnancy—in fact, pregnancy was impossible in many cases in which such faulty position existed. The author's experience included seventy-nine cases in hospital and forty-two in private practice, in which pregnancy was thus complicated. In all the cases there were typical symptoms resulting from the retro-deviation. It was important to consider two questions in this connection: 1st. Was retro-deviation a bar to pregnancy? 2d. Was retro-deviation during pregnancy as serious a condition as was commonly supposed? In many of the author's cases there had been important symptoms including hemorrhage, uterine catarrh, tubal disorders, and, in some cases, peritonitis. Cases were narrated in which pregnancy continued to term without the occurrence of any serious disturbing symptoms. If the retro-deviation were congenital, there was sufficient evidence that it might result in sterility. The author did not accept the assertion that all cases of retroflexion of the gravid uterus in multiparæ were due to improper treatment during childbed. In most of his cases conception occurred in uteri which were already retroflexed, an evidence that the displacement was not a bar to conception, and this was true whether the displacement was congenital or acquired. In all cases of sterility with uterine retro-displacement it was essential to ascertain the existence or non-existence of impotence in the husband. Catarrhs and abrasions of the uterus required local treatment the same as in the non-gravid condition. Abortion occurred only four times among his cases. In ninety-seven of them delivery was at term. The faulty position in his cases was discovered at periods ranging from the second to the sixth month. The treatment consisted in first having the bladder evacuated, then, with the patient in the knee-elbow position, the uterus should be replaced, if possible, with pressure from one or two fingers, a suitable pessary being introduced to hold it after such replacement. The pessary might remain until the sixth month, and in cases in which its use was inadmissible, or in which adhesions prevented the replacement of the organ, graduated pressure with a vaginal tampon of cotton-wool could be used. The author's results had been very favorable. Grave complications are now recognized earlier than they used to be. It is not to be doubted that many cases of retroflexion in the gravid uterus cause no symptoms, and the cases go to term, no diagnosis of a morbid condition being made. In case all efforts at replacing the uterus or holding it when replaced should fail, one must take into consideration the propriety of emptying the organ, or, as an extreme measure, extirpating it.

Dr. Bache Emmet had seen few cases in which pregnancy occurred in the retroflexed organ. Indeed, he had considered the retroflexion a bar to pregnancy in most of the cases which were brought to his notice. If the displacement was not or could not be corrected, it was at least desirable, and usually possible, to raise the uterus in the pelvis, which would favor conception, or its continuance, if already existing.

Dr. Howard Kelly had seen conception follow the cure of uterine retro-deviations. He believed that in most of the cases in which pregnancy coexisted with uterine deviation a spontaneous cure resulted, and that in a minority only was there abortion or other severe accident. A kindred fact consisted in the faulty development of the uterus during pregnancy, though its posi-

tion might have been normal when conception occurred. As an extreme resort, he could conceive of the necessity of opening the abdomen during gestation and relieving the displacement.

DR. T. A. EMMET believed that backward displacement never occurred without the existence of local inflammation. He did not think such malposition would have any bearing upon the question of conception, especially if the Fallopian tubes were sufficiently patent to permit the passage of the spermatozoa. He had seen cases in which he believed that replacement with vaginal packing had prevented abortion. He preferred the knee-elbow position for replacement; but great care was necessary in performing this operation, otherwise an abortion would be induced. The use of pessaries in this condition was attended with danger.

DR. A. J. C. SKENE could not conceive of any condition which would justify extirpation of the uterus, however grave the displacement.

DR. H. F. HANKS, of New York, thought that many cases of abortion could be prevented in the retroflexed gravid uterus, if judicious means were taken to relieve the displacement. Careful packing of the vagina was better for such a purpose than the use of pessaries.

DR. J. CHADWICK objected to severe measures of treatment in the condition under discussion. He thought that abortion was not a common result of the condition. Pessaries were allowable in his opinion. If there were retroflexion with adhesions, pregnancy rarely occurred.

DR. BOLDT stated that cases had been reported in which death had resulted from inability to reduce the gravid retroflexed uterus. In such cases an abdominal section would have been justifiable.

DR. E. C. GEHRUNG, of St. Louis, Mo., read a paper entitled

RESULTS OF REPRESSION OF MENSTRUATION.

It was a demonstrated fact that menstruation might with safety be stopped by the use of the vaginal or uterine tampon in cases in which the patient could not afford the loss of blood. The experience of the year since the reader had propounded his views on this subject had made his convictions firmer that this method of treatment was useful both for prophylaxis and cure. Menstruation did not necessarily include a sanguineous discharge. The menstrual molimina might be present without it. It was but an accidental accompaniment of ovulation, etc., and would be as harmful as repeated hemorrhage from any other source, were its effect not modified in many cases by the force of transmitted habit. Sanguineous menstruation is a potent cause of anæmia in women, and he believed it could serve no useful purpose, any more than did the old doctrine of Broussais that men should be bled monthly to relieve plethora. If plethora really existed, it was best treated by redistribution, not abstraction, of blood. If, as is asserted, bleeding sometimes acts a safety-valve, it is at least a safety-valve which should rarely be used. Even if it is a fact that women make blood rapidly, this is no advantage if they are to lose it as rapidly as it is made. It is a dangerous error that bleeding disposes of superfluous elements. The best method for stopping menstruation consists in the use of the vaginal tampon. It gives no shock to the nervous system, neither does it poison the blood, as might be the case if ergot or other drugs are used. If metrorrhagia or menorrhagia existed, the tampon should be used regardless of menstruation. Scanty menstruation is observed in anæmic women, and is usually the result of previous excessive losses. Repression in such cases tends to relieve the nervous symptoms, the anæmia, etc. In women with amenorrhœa it is generally necessary to relieve a depraved general condition, and when menstruation reappears the tampon should be used periodically until the patient becomes strong again. The paradox in this case is only apparent; the first step is to remove the cause, the second to correct the trouble. Certain neuroses and neuralgias are also amenable to treatment by the method under consideration. No bad results had been seen or heard of from the use of this method. It was believed that it would serve as a means of relief in many cases of uterine and pelvic trouble which would otherwise necessitate mutilating operations.

DR. BOLDT could not believe that menstruation was a pathological condition, nor that the bleeding which formed an important element of it, was an accidental hemorrhage. The condition of the majority of women refuted the assertion that continued menstruation tended to produce anæmia. That anæmia might be independent of menstruation was shown by its persistence in many cases in which the uterine appendages were removed and a premature menopause induced. That systematic bleeding was a functional habit in women was also demonstrated, he thought, in those cases in which *purpura hemorrhagica* recurred with regularity after the ovaries and tubes had been lost. No one would deny that a tampon was advisable if menstrual hemorrhage was excessive, but the speaker doubted if it would ever be wise to leave it in place as long as seventy-two hours, which had been recommended. If it were to be used at all to check excessive flowing, it was well to begin its use two or three days before menstruation was due.

DR. A. W. JOHNSTONE thought the reader had made a mistake in considering menstruation pathological as it was as necessary a function as respiration, its object probably being to wash away over-ripe lymphoid corpuscles. Among the higher animals, in which there is a discharge which more closely resembles menstruation than that which occurs in any of the other animals, and in which the uterus tends to the vertical rather than the horizontal posture, as in woman, this discharge is especially noteworthy in those varieties which stand particularly erect or nearly so. There would be no use in the vaginal tampon, as a means of repressing menstruation, unless one should also close the mouth of the Fallopian tubes. Harm from menstruation proceeded rather from nervous than from vascular influence. The tampon would be more or less dangerous, as congestion of the broad ligaments would be unrelieved, stasis would result, and an indication for operative measures upon the uterine appendages would be favored. The bloody discharge which occurred so frequently after laparotomy was probably due to the squeezing by the ligature of the nerve described by himself which was situated at the angle formed by the Fallopian tube with the uterus. He believed that menstruation was a portion of the mechanism for preparing woman for pregnancy, the end for which she seems physiologically destined.

DR. A. R. JACKSON did not feel satisfied with a theoretical explanation when it was in opposition to the facts of

observation. He had practised repression after the manner described by the reader for many years in cases in which menstruation was profuse and had seen only benefit as to the result. Profuse flowing must eventually result in anæmia, and, in so far as it applied to this, the method of the reader was endorsed.

Dr. Gehrung, in closing, stated that his proposition was to repress menstruation only in cases in which the patient could not well bear the loss of the blood. He was unwilling to agree with Dr. Johnstone that the free bleeding of menstruation was dependent on nervous influence, and thought it depended rather on the weakness of the womb, as a structure, and its vessels.

Dr. H. J. Boldt, of New York, read a paper entitled

Intermediate Trachelorrhaphy.

The majority of gynecologists were willing to admit that a great variety of ills might follow laceration of the cervix uteri, Noeggerath being one of the few prominent physicians who violently oppose it. Bad symptoms might appear as soon as three months after parturition. In an analysis of the histories of 3000 childbearing women, 109 were found in which symptoms were evidently referable to a tear of the cervix. If then bad symptoms were presumable, at a more or less remote period, in women who had suffered severe injury to the cervical tissue at parturition would it not be expedient to anticipate such trouble by performing trachelorrhaphy as soon as possible after the puerperal period was ended? The reader of the paper had acted upon this proposition in 26 cases, in only 4 of which was success wanting. The operation might be performed in one's office, and without anæsthesia, as it was unattended with pain. The surfaces of the torn portions were scraped, the angles freshened, and catgut sutures were carefully and not too tightly placed. A straight trocar needle was used, a very sharp scraper, and a tenaculum devised for the purpose. The object of the operation was to prevent or avoid the conditions for which Emmet's operation was indicated.

Dr. Bache Emmet thought that the object which the reader of the paper sought to obtain by his operation was a good one. He also thought that if the work of the obstetrician had been done properly many of the cases which require treatment would not need it. He did not think it well to anticipate symptoms, for one could not say in advance how well nature would do the work of repair, for that reason he did not believe the reader's operation would often be indicated. It would seem to him also that the tissues were not in good condition for a successful operation so soon after labor as had been advised. He believed it unadvisable to do such operations in one's office, and furthermore believed that the operation was one which required the skill of a gynecologist and should not be done by the general practitioner.

Dr. Skene did not approve of doing trachelorrhaphy until the appropriate symptoms appeared which indicated it. He was also opposed to doing such operations without an anæsthetic and in one's office.

Dr. B. F. Baer, of Philadelphia, understood the question of the paper to be whether laceration of the cervix *per se* was or was not a lesion. If it were to be considered a lesion, the reader was right in proposing that an obstetric patient with such a lesion should not be discharged until that lesion was repaired.

Dr. T. A. Emmet felt that the proposed operation had no place, that trachelorrhaphy should not be done in one's office, and that in the absence of symptoms it should not be performed. Nature would usually repair the damage done by a severe labor if a patient had proper care subsequently, including suitable diet, sunshine, hot douches, etc. Hence no one could say as early as a month after labor whether an operation would ever be called for. He had found that the cases which needed it most frequently, included those women who bore many children, the pregnancies following each other in quick succession.

Dr. Engelmann did not altogether agree with the reader of the paper, but did not think the paper had been fairly discussed, in view of the fact that there were many cases in which the extent of the injury was such that they were almost certain to give rise to the characteristic symptoms. Like the other speakers, he disapproved of doing such operations in one's office.

Dr. Boldt, in concluding, desired to maintain the principal proposition of his paper, that cases in which the injury was so severe that symptoms could be predicted, would be benefited by intermediate trachelorrhaphy.

Dr. T. A. Ashby, of Baltimore, Md., read a paper entitled

The Value of Laparotomy in the Diagnosis and Treatment of Minor Forms of Intra-abdominal and Intra-pelvic Disease.

It was stated that the limits of laparotomy would apply in general to those obscure conditions in the abdomen in which all other means of diagnosis and treatment had been unavailing. It was the only means of diagnosis for certain obscure forms of disease of the tubes and ovaries. There was still an unreasonable prejudice against it in certain directions, for it must be remembered that there was no danger in an abdominal section *per se*, but in the way in which it was done. Simple abdominal section should have no mortality, and was indicated in any condition which could not be treated by other methods.

The operation was indicated for morbid growths of the abdomen which might be small, but the relations of which could not be made out by other means. For ectopic gestation, he believes laparotomy is always indicated. As an expedient, it was preferable to electricity for many reasons. Neuralgic conditions of the pelvis, especially when associated with persistent pelvic pain, seemed to him an entirely legitimate indication for laparotomy. Intra-pelvic pain from displaced organs was an indication when other measures failed, and so were many forms of intra-abdominal and intra-pelvic hemorrhage.

Dr. E. W. Sawyer, of Chicago, read a paper entitled

Partial Rotation of the Ovum in Early Pregnancy as a Cause of Placenta Prævia, Suggested by Two Cases in Practice.

The hypothesis of the reader was that since in the earliest period of pregnancy the ovum is not very firmly attached to the decidua, violence of a certain character,

for example, a fall or a violent jump, might displace it, throw it more or less downward on its axis, and cause it to lodge in the lower or cervical segment of the body; its proper site being usually considered as in the upper segment. The villosities of the chorion being detached along the upper (relatively) surface of the sphere as it rolls downward, a new implantation must be found, and that would necessarily be in the lower uterine segment and in greater or less proximity to the os internum. This would result in more or less pronounced placenta prævia. Two placenta (battledore) illustrative of this condition were exhibited, also diagrams demonstrating the hypothesis.

Dr. C. Kollock, of Cheraw, S. C., read a paper entitled

THE PROTECTIVE INFLUENCE OF VACCINATION DURING THE INTRAUTERINE EXISTENCE OF THE FŒTUS.

The protective value of vaccination to a fœtus, by the performance of that operation upon the mother, had been demonstrated by several French investigators, and its importance had seemed great to the reader. He had many times witnessed, in the malarial country in which he lived, typical congenital malarial fever in newborn infants, and was induced by these facts to make a series of experimental inoculations upon pregnant women, 36 in number, 14 being primiparæ. After labor was completed, the infants were also vaccinated. Of the children of the 14 primiparæ, vaccination failed in 5; of those of the 22 multiparæ, it failed with 16. It was evident, therefore, that immunity could be communicated by this method. It was probably better to vaccinate the mothers during the latter months of pregnancy when the fœtal circulation was well established and active.

Dr. Sawyer, of Chicago, corroborated the statements of the reader, from an experience in vaccinating 30,000 times during the past few years, the large majority of the individuals being school-children.

Dr. J. R. Chadwick, of Boston, Mass., read a paper entitled

A CASE OF NEPHROTOMY FOR THE REMOVAL OF CALCULUS OF THE KIDNEY.

This was a case in which calculus of the left kidney had been diagnosticated by eminent authorities, and the symptoms pointed so strongly to its existence that an operation was advised. The kidney was incised, thoroughly explored and then carefully washed out, but no calculus was found. Since the operation the bad symptoms had returned, they were always exaggerated by worry on the part of the patient, and the reader of the paper believed that the symptoms were purely of nervous origin.

Dr. A. F. Currier, of New York, suggested that the stone might have been in the cortex of the kidney, but so small that it was overlooked, not appreciated by the examining finger, and so impacted that it could not be washed out, a case presenting somewhat similar phenomena being narrated.

Dr. G. J. Engelmann suggested that the possibility of obscure pelvic disease should be thoroughly considered in the case in question, and that it might throw some light upon it.

CORRESPONDENCE.

A NOVEL CATHETER.

To the Editor of The Medical News,

Sir: On May 27th I was called to attend a boy near Equimunk, Pa., twenty-two miles from here, and found him suffering from acute peritonitis. When I called three days later he was suffering severely from complete retention of urine. I did not have a catheter with me, and as I would have had to send twenty-two miles to my home or eighteen miles to Hancock, New York, before one could be procured, making forty-four miles one way or thirty-six the other, before the boy could be relieved, and as he was suffering such severe pain, I thought I would try an original plan of my own.

I went out into a field and cut several long stems of what is known as buttercup or yellow daisy crowfoot and botanically as *Ranunculus*. I rubbed the stem down very carefully not to break any of its longitudinal fibres, oiled it, and drew the patient's water with it as well as if I had had one of the best of catheters. The boy was well formed and large for his age, weighing one hundred and forty pounds.

As the employment of a weed as a catheter is certainly novel, and as neither I nor my colleagues have heard of a similar case ever being reported, I have ventured to send it to The News, trusting that your readers may find it of interest. Truly yours,

Sanford A. Kelly, M.D.

Honesdale, Pa., July 10, 1889.

NEW YORK.

(*From our Special Correspondent.*)

New York Academy of Medicine.—The corner-stone of the new building of the New York Academy of Medicine, in West Forty-third Street, near Fifth Avenue, was laid with appropriate ceremonies on the afternoon of October 2d. There was a large gathering of the medical profession, and distinguished men in other walks of life were also present.

The exercises were opened by an invocation by the Right Rev. Henry C. Potter, Bishop of New York, after which Dr. Abraham Jacobi, ex-president of the Academy, delivered an address, in which he spoke of the purposes and needs of the institution, and the relation of the medical profession to the community. In the course of his remarks he said: "The Academy has furnished a consulting bureau to all the Health Department's hospitals. A committee of the Academy was intrusted with the inquiry into the report on the condition of quarantine. It was to its report that the first appropriation for the rebuilding of the quarantine station was due, and to its recommendations that improvements are being carried out at the present time. In this way the medical profession excludes epidemics, and guards both physical health and the economic interests of the city."

Ex-President Grover Cleveland then delivered an address, which was in part as follows: "The congratulation and the satisfaction which attend this hour especially belong to the members of the Academy of Medicine. This is as it should be, for the exercises of to-day signalize an achievement wrought by their activity and energy, and give proof of their devotion and attachment

to their chosen profession. . . . . In these extensive foundations is also found proof of the progressive ideas of these earnest men, and their constantly enlarging estimate of what is necessary to meet the the purposes to which their energy is directed. . . . . I have spoken of the mission of the Academy. The nobility and sacred character of this mission have been often dwelt upon. It is an old story, but it will never lose its interest while humanity is touched with human woe, while self-sacrifice receives the homage of Christian hearts, while the sufferings and sorrows of our fellow-men start the tear of pity, nor while their alleviation brings comfort and satisfaction to the soul of sympathy. These reflections easily and naturally lead to the thought that the members of the Academy of Medicine are not entitled to the absolute monopoly of congratulation to-day. All your fellow-citizens may well claim a share, not only because they are interested in the promotion of the science and art of medicine, by reason of their liability to accident and disease, but because such advance in any profession as is here demonstrated adds to the glory and renown of our common country."

At the conclusion of Mr. Cleveland's remarks, the corner-stone was laid by the President of the Academy, Dr. Alfred L. Loomis.

THE RADICAL CURE OF HAY-FEVER WITH CHROMIC ACID.

To the Editor of The Medical News,

In the issue of The News for September 15, 1888, I presented a method of palliating the symptoms of hay-fever by the internal use of atropine and the local application of cocaine, both drugs being employed in doses much smaller than usual. Having followed the same method of local application with another agent, chromic acid, I am now enabled to present a means of radically curing obstinate cases of this disease.

The wire applicator shown in the engraving is identical with the form used last year, no advisable change having suggested itself. With this instrument carrying a medicament on cotton, applications may be made in all parts of the nose, an essential advantage which it does not share with any practicable form of galvano-cautery. The cautery, moreover, has several other disadvantages, among which the most important is its tendency to stick to the surface against which it is heated, and to require a pull for separation which effectually prevents the brushing movement necessary for the complete covering of a surface. None of the disadvantages inherent in the cautery are presented by the wire cotton-carrier bearing a proper fluid caustic. Of the many agents of this class, chromic acid possesses preëminent qualifications for our purpose. It is freely soluble, and can therefore be applied to every portion of a given surface; its solutions in successive strengths pass by continuous gradations from a mild astringent to a most powerful destroyer of animal and vegetable tissue. In proper strength it instantly combines with gelatinous and albuminous substances to form a tough, leather-like compound; it does not fume or evaporate, and has no smell, wherein it possesses a great advantage over the irritating acids, acetic, carbolic, and nitric, as well as over the cautery which generates pungent ammonia; and lastly, it is almost painless, and thereby distinguished from all other caustics, acid, alkaline, or thermal. This quality of virtual painlessness is only possessed by the absolutely pure chromic acid, the presence of a small quantity of sulphuric and arsenious acids, which accompany the impure article, giving rise to pain equal to that occasioned by other caustics. Merck's chromic acid has been found to answer the most rigid requirements, and is therefore recommended. Owing to its property of combining with gelatin and albumen, chromic acid instantly destroys the surface of mucous membrane, converting it into a leather-like film which adheres to the unchanged tissues beneath. The continuity of this film is proved by the fact that a second application of chromic acid to a spot once touched is scarcely perceived, from which it is obvious that the much milder irritant contained in the specific cause of hay-fever will likewise fail to act. The mucous surface being thus protected from irritants and microörganisms, will have the best conditions for rapid healing with normal nerve terminals, the only cure which can properly be characterized as radical. The extreme solubility of chromic acid places the operator in perfect control of the effect to be produced. In a solution of 1 per cent. it is astringent, in 10 per cent. it is a caustic as powerful as will be necessary except in special cases requiring removal of more than superficial tissue.

The only preparatory treatment which may be necessary is the checking of any abnormal secretion of mucus or serum. This is most readily accomplished with atropine, $\frac{1}{200}$ grain of which is given, and repeated in fif-

Wire applicator, two-thirds actual size; made of German silver wire one-twenty-fifth inch in diameter; low spring temper.

teen minutes if the desired diminution in the flow has not been attained in that time. Mucus interferes in two ways with the action of the acid: first it dilutes it to an unknown strength, and secondly, it combines to form a ropy substance which prevents the acid from reaching the surface of the membrane. Before introducing the acid, the physician should map out the surfaces requiring treatment. Polypi and hypertrophies are distinguished by the light thrown by a concave mirror through the speculum placed in the nostril, or upon the rhinoscopic mirror placed in the pharynx. Large growths may be removed by the cold or hot snare, the cautery, or chromic acid in solution containing 15 to 20 per cent. Cure will often follow the restoration of the nose to normal calibre; but on the other hand, hay-fever may occur in patients whose nostrils are entirely normal as far as present methods of inspection can reveal. In such cases the physician must resort to other means of diagnosis. With

the wire applicator carrying cotton soaked with pure water he can investigate parts of the nose into which light cannot penetrate. Sensitive spots, when touched, disclose themselves by the watering and winking of the patient's eye on the side under investigation and by the excitation of coughing or sneezing. The wire can and always should be withdrawn in advance of a cough or sneeze. The position of the cotton is of course known by the position of the end of the wire in the physician's hand. Having mapped out the spots at fault, he carries to them the chromic acid, preferably in 5 to 8 per cent. solution, and moves the cotton *slowly* over them to insure a thorough covering of the whole surface. It is well to make several applications over the same spots in one nostril at a sitting, as mucus may prevent a sensitive spot from being touched. If the patient is anxious for relief and willing to stand the greater discomfort for a shorter time, both nostrils may be treated at once. Should the new surface prove endowed with abnormal sensibility the process may be repeated without hesitation till the desired grade of nerve adjustment is reached. Treatment may be begun during the height of an attack, although if severe conjunctivitis is present it is well to proceed cautiously, as the inflammation excited by the acid, when applied in places most likely to be diseased, may increase the determination of blood to the eyes. Severe conjunctivitis is well treated by allowing fifteen drops of a solution of ½ per cent. of cocaine and 3 per cent. of boracic acid to fall into the eye and to be carried about for a few minutes by winking. The prone position is necessary for this purpose. Special attention should be paid to the anterior part of the upper turbinated body and to the anterior angle of the nose, as nature seems to have placed there the most sensitive nerves for the purpose of excluding noxious gases and irritants at the threshold of the respiratory apparatus. If the patient is unusually intolerant of pain the nostrils may be painted with a 2 or 4 per cent. solution of cocaine, but this drug should not be mixed with the chromic acid, as it is immediately precipitated in a gummy mass. The patient may advantageously make these applications himself under the supervision of a physician. Assured that his sensations will not allow him to do harm, he will quickly learn to distinguish the peculiar and indescribable feeling of the hyper-sensitive spots and to make applications to them with certainty. The amount of cotton to be used is shown in the cut. This should be soaked, and any excess allowed to drop off, as it might be drawn back into the throat by inspiration, and cause pain and coughing. The treatment will at the least consume several days, and possibly a few weeks. For instant relief only palliative measures will answer, and a year's experience with the cocaine and atropine treatment in the hands of other observers has confirmed the claims made for it as being effective and free from danger of poisoning or habit creation.

The immediate effect of chromic acid is to cause obstruction and watering of the nose and lachrymation. These symptoms displace the complex and far more annoying symptoms of hay-fever. Within a few minutes the discomfort and watering of the eyes begin to diminish, and in about one-half hour the watering and obstruction of the nose begin to abate. The patient should be instructed to use a cheap handkerchief at least during the hour after an operation, as the mucus is then capable of destroying even such resistant fibres as silk and linen, a good evidence of its energy in the solutions recommended. Neither the interior nor the exterior of the nose is rendered sore by any acid which happens to touch a place not intended. The imperfect sleep of hay-fever is improved. The power of chromic acid to promote the growth of normal mucous membrane is proved by the increase it effects in the delicacy of the sense of smell. This effect is due in part to the tendency to contraction exerted by chromic acid on the tissues, of which tendency advantage is taken by this method of application which is able to carry the acid directly to the surface exposing the end filaments of the olfactory nerve. The principal seat of the sense of smell is a narrow chink situated in the upper anterior region of the nose, a space prone to engorgement, as is proved by the obliteration of smell in incipient coryza before the wider breathing spaces below are obstructed. Obviously the widening of this chink, by allowing access of scent-bearing air to the olfactory nerve, will promote the perception of smells, and, furthermore, it will *add to mental activity, which is very closely dependent upon perviousness in this region* owing to the path followed by blood going to the fore-brain. The contraction of tissues is often sought by means of the cautery, and frequently defeated by the total regeneration of the burnt portion. When attained it is often attributable to the formation of scar-tissue, which is well known to be abnormally subject to malignant degeneration. Moreover, scar-tissue is insensitive to normal stimuli, and therefore a permanent damage to the organ.

The wider knowledge arising from the attention paid to hay-fever within the last decade has demonstrated beyond question that this misnomer improperly groups varying combinations of symptoms arising from a large number of causes. The physician should not accept a patient's self-diagnosis, but should draw his own conclusions from a separate examination of each case. By such examination he will be guided to a knowledge of the special cause, and therefore to the most effective treatment—for some tonics, for others sedatives or antipyretics, for others surgical or local measures. But, after all known methods of treatment have been tried, there has still remained a proportion of unexplained failures to cure, and it is believed that the measures above outlined will lead to the reduction, if not the entire obliteration, of this remainder.

A. H. L.

NEWS ITEMS.

Rembrandt's "Lesson in Anatomy."—Rembrandt's celebrated picture entitled "A Lesson in Anatomy," a full size copy of which hangs at present in the hall of the College of Physicians of Philadelphia, has, we understand, been purchased by Mr. Ellesworth, for the Institute of Art, of Chicago. It formerly belonged to the Princess de Sagan, and until recently has been in an art gallery in the Hague.

Execution by Electricity.—At a recent meeting of the Paris Academy of Sciences a communication from Mr. Edison was read respecting the use of electricity as a means of inflicting capital punishment. He is of opinion that an alternative current will cause death without pain, but he adduces no experimental evidence in support of

that contention. The matter was referred to the Medical Section of the Academy, which is to have the assistance of M. Marcel Desprez, the electrician, in drawing up a report on the subject.—*British Med. Journal*, September 21, 1889.

Opening of the Training School of the Johns Hopkins Hospital.—The Training School of the Johns Hopkins Hospital, Baltimore, was opened with appropriate ceremonies on Wednesday afternoon, October 9th, at half-past three o'clock.

The Medical and Chirurgical Society.—The London strikes have had their effect in medical circles. The erection of the new edifice of the Royal Medical and Chirurgical Society, in Hanover Square, has been seriously delayed, so that it is doubtful if the new library and rooms for meeting can be utilized during the coming winter. Three other societies, the Pathological, the Clinical, and the Obstetrical, expected to enjoy the privileges of the new buildings, but are now, for an indefinite period, without suitable accommodations for their meetings.

Vindication of an Accused Physician.—The *cause célèbre* at Brooklyn, known as the Bogert-Duncan case, has passed its first stage. The charge against Dr. Bogert, brought by the Commissioner of Health, Dr. Griffin, has been dismissed in the police court. Dr. Bogert was accused of wilful violation of the sanitary ordinances in that he did not report the case of his friend, Dr. Duncan, of the steamer "Colon," when treating him for yellow fever. Dr. Bogert, who has always denied the fact of yellow fever, and who, the other day, had the Health Officer of the Port, and five other medical witnesses, ready in court to testify to his correctness in diagnosis, has been anxious to have his hearing in the courts. The complainant asked for an adjournment, the fifth or sixth, which was more than the Justice could allow, and the case was dismissed in default. It may, of course, be heard anew, but the present position is practically a vindication of the accused. Again, Dr. Bogert has a serious grievance against the Board of Health for holding him a prisoner, at the residence of his patient, under the guise of a quarantine. He and his friends have repeatedly threatened to bring suit against the city for damages due to this duress, which lasted two days and over. That this will ever be done is most doubtful, for such matters move too slowly to be either entertaining or instructive. A lesson has probably been learned, however, by the health officials. They know that if they imprison a medical man at the house of his patient, in *quasi* quarantine, there is very soon thereafter to be a storm in the profession which will be unpleasant and injurious. Not even the fear of yellow fever will ward off this result.

American Public Health Association.—We are in receipt of the circular of the American Public Health Association, which contains the programme of the seventeenth annual meeting, which is to be held at the Brooklyn Institute, Brooklyn, N. Y., from October 22d to 25th, inclusive. Among the principal subjects for consideration we note the following:

1. Causes and Prevention of Infant Mortality.
2. Railway Sanitation.
3. Steamship Sanitation.
4. Methods of Scientific Cooking.
5. Yellow Fever.
6. The Prevention of Tuberculosis in Man.
7. Methods of Preventing Diphtheria, etc.

Over twenty original papers will be presented. Among the speakers we notice the names of Drs. John S. Billings, George M. Sternberg, Henry B. Baker, Henry Leffmann, J. N. McCormack, and others equally well known. The meeting will be rendered still more interesting by an exhibition of sanitary goods and appliances. An address of welcome will be delivered by Hon. Alfred C. Chapin, Mayor of Brookyn, and also by Dr. Alexander Hutchins on behalf of the profession.

The Secretary, Dr. Irving A. Watson, gives, in the circular, all necessary information concerning reduced hotel and railroad rates. The meeting will be presided over by Professor Hosmer A. Johnson, M.D., of Chicago.

The profession in general is cordially invited to attend the meeting, and both ladies and gentlemen of the laity will be welcomed to the evening sessions.

Cholera on the Euphrates.—Latest advices inform us that cholera still continues to be epidemic at Bassorah, Bagdad, and other places on the Euphrates. The death-rate is said to be very great.

New German Pharmacopœia.—The Imperial Pharmacopœia Commission of Germany is to meet in Berlin this month, in order to frame the third edition of the Pharmacopœia Germanica. It is their aim to have the work completed by 1890. All recent additions to materia medica will be incorporated in this new edition. In addition to the Pharmacopœia the German Society of Apothecaries intend issuing a supplement which will deal with all the remedies not given in the official dispensatory. The profits accruing to the Society from the sale of this supplement will, it is said, be devoted to a philanthropic cause.

Mortality in Philadelphia.—During the week ending September 28th there were 312 deaths in this city. This includes the following deaths from infectious diseases:

Enteric fever	15
Scarlet fever	2
Diphtheria	3
Whooping-cough	2

Scarlet Fever in London.—The epidemic of scarlet fever in London seems to be steadily on the increase. According to the *Medical Press and Circular* of September 25th, the number of cases under treatment in the hospitals of the Metropolitan Asylums Board, on September 17th, amounted to 1070.

Illness of Dr. F. X. Dercum.—We regret to learn that Dr. F. X. Dercum, the Instructor in Nervous Diseases in the University of Pennsylvania, is seriously ill with typhoid fever.

New Building for the Philadelphia Polyclinic.—The contract for the erection of the new college, hospital, and dispensary building of the Philadelphia Polyclinic and

College for Graduates in Medicine was awarded last Saturday.

The new structure will rest on a lot 96 feet by 143 feet, about three blocks from the present temporary quarters, and will be of brick, sand-stone, and terra-cotta. It will be four stories in height, and will occupy at present only one-half of the lot.

The important features of the building will be the incorporation of the most modern accepted plans in hospital construction.

The system of heating will be by indirect radiation, and the ventilation that of sub-stratum suction. All corners in the building will be rounded to avoid the accumulation of dust. The water-closets and bath-rooms will be in a separate building easily accessible from all parts of the building. The kitchen and laundry will be at the top, separated from the lower floors by an artificial stone floor. The clinic rooms will be on the first floor in direct communication with a spacious waiting-room.

The corner-stone will be laid with the impressive masonic ceremonies on November 2d, on which occasion it is hoped that the committee having the matter in charge, will be able to present the fund for the perpetual endowment of a free bed in the name of Dr. R. J. Levis, as a testimonial of esteem, and in recognition of his professional eminence.

Electricity at the Howard Hospital.—At the Howard Hospital, Broad and Catharine Streets, Philadelphia, electricity is now a special feature of one of the gynecological clinics, under the charge of Dr. G. Betton Massey, who invites the profession to send cases there for which this treatment is appropriate, particularly fibroid tumors. The clinics are held Mondays, Wednesdays, and Fridays, at 12 M.

Dr. Roberts Bartholow.—For the past few days a report has been widely circulated through this city to the effect that Dr. Bartholow had been called to Milwaukee to see one of the millionaires of that city, the fee to be paid being one of the largest in the history of medicine. An enterprising New York reporter has prepared a long article on the subject. We learn from correct sources that the story is a hoax, and that there is no truth in it, except the fact that the members of the profession of this city are recognized as worthy of handsome remuneration.

Death of Professor Rudolph Voltolini.—Laryngology abroad has lost one of its most prominent representatives in the person of Professor Rudolph Voltolini, of Breslau, who died on September 11th, in his seventy-first year. Voltolini was an enthusiastic worker in the field of medicine which he had chosen. He has been not unjustly called the father of rhinoscopy, and certainly did more to improve the *technique* of that difficult art than any other teacher. He was a most able writer, being one of the editors of the *Monatschrift für Ohrenheilkunde* up to the time of his death. He was also the author of numerous works dealing with his specialty.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING OCTOBER 5, 1889.

HARMON, GEORGE E. H., *Surgeon.*—Detached from the U. S. S. "Constellation," and ordered to the Naval Academy.

LOWNDES, C. H. T., *Assistant Surgeon.*—Detached from the U. S. S. "Constellation," and ordered to the Naval Academy.

WINSLOW, GEORGE F., *Surgeon*—Ordered to Marine Rendezvous, Boston.

HENRY, CHARLES P., *Assistant Surgeon.*—Ordered before the Retiring Board for examination.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM AUGUST 24 TO OCTOBER 5, 1889.

FESSENDEN, C. S. D., *Surgeon.*—Granted leave of absence for thirty days, October 3, 1889.

WYMAN, WALTER, *Surgeon.*—Granted leave of absence for thirty days, September 3 and 21, 1889.

SAWTELLE, H. W., *Surgeon.*—Granted leave of absence for seven days, September 26, 1889.

AUSTIN, H. W., *Surgeon.*—Granted leave of absence for thirty days, September 9, 1889.

GASSAWAY, J. M., *Surgeon.*—When relieved at New Orleans, La., to rejoin station at Cairo, Ill., September 30, 1889.

GOLDSBOROUGH, C. B., *Surgeon.*—Leave of absence extended thirty days, on surgeon's certificate of disability, September 16, 1889.

ARMSTRONG, S. T., *Passed Assistant Surgeon.*—Relieved from duty at New York; ordered to command of Service at Cleveland, Ohio, September 17, 1889.

AMES, R. P. M., *Passed Assistant Surgeon.*—Assigned to duty at New Orleans, La., upon expiration of leave of absence, September 30, 1889.

WHITE, J. H., *Passed Assistant Surgeon.*—Leave of absence extended thirty days, on surgeon's certificate of disability, September 21, 1889.

NORMAN, SEATON, *Assistant Surgeon.*—Granted leave of absence for thirty days, to take effect when relieved, October 4, 1889.

PETTUS, W. J., *Assistant Surgeon.*—Ordered to Portland, Me., for temporary duty, September 26, 1889. Granted leave of absence for twenty-six days, to take effect when relieved, October 3, 1889.

KINYOUN, J. J., *Assistant Surgeon.*—Granted leave of absence for thirty days, September 21, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 1 TO OCTOBER 7, 1889.

POINDEXTER, JEFFERSON D., *Assistant Surgeon.*—Granted leave of absence for one month.—*S. O. 115, Headquarters Department of Dakota*, September 30, 1889.

BILLINGS, JOHN S., *Surgeon.*—Detailed as delegate to represent the Medical Department of the Army at the annual meeting of the American Public Health Association, to be held at Brooklyn, New York, October 22, 1889.—Par. 10, *S. O. 230, A. G. O.*, October 3, 1889.

POPE, BENJAMIN F., *Surgeon.*—Relieved from duty at Fort Clark, Texas, and will report for duty to commanding officer Whipple Barracks, Arizona Territory.—Par. 11, *S. O. 230, A. G. O.*, October 3, 1889.

TREMAINE, WILLIAM S., *Surgeon.*—Relieved from duty at Fort Leavenworth, Kansas, and will return to his home, Buffalo, New York.—Par. 13, *S. O. 230, A. G. O.*, October 3, 1889.

KENDALL, WILLIAM P., *Assistant Surgeon.*—Granted leave of absence for one month.—*S. O. 93, Department of the Platte*, October 2, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, OCTOBER 19, 1889. NO. 16.

ORIGINAL ARTICLES.

THE RELATIONS OF ANÆMIA TO CHLOROSIS.[1]

BY F. FORCHHEIMER, M.D., *Co-referee*,

PROFESSOR OF PHYSIOLOGY AND THE CLINICAL DISEASES OF CHILDREN IN THE MEDICAL COLLEGE OF OHIO, CINCINNATI.

IN order to bring the whole subject up for discussion, as proposed by the Council of the Association, the referee and co-referee have thought it judicious to divide it into two sections. This has seemed the more proper as, upon mature consideration, compression of the more or less vague data into the allotted space and time seems almost impossible. To those who have occupied themselves with the pathology of the blood, and there are several in our midst whose names occupy a high position in this respect, the fact is apparent that confusion reigns supreme in this field which might, possibly, be easily cleared away if exact methods of examination were employed. Under all circumstances, our lines might be more strictly drawn and a beginning made for the more accurate and scientific study of these subjects; in this way elimination of one disease from another or identification would follow, and much benefit would accrue.

In the discussion of our present subject, the first thing that comes up to confuse us is the definition of the two diseases. Immermann (Ziemssen's *Hdbch.*, xiii. p. 275) begins his definition as follows: "The conception of anæmia, somewhat indefinite in its elasticity, etc.," and follows it up with nearly two pages of text, from which the final conclusion is to be drawn that, partly from clinical and partly from direct (analytical) evidence, we are justified in stating that anæmia is that condition in which there is a diminution of red corpuscles as well as of the albumins of the plasma in the blood (hypalbuminosis). Strümpell (*A Text-book of Medicine*, edited by Frederick C. Shattuck, A.M., M.D., p. 874) states that "the essential element in anæmia is, therefore, a diminution in the number of red corpuscles, or so-called oligocythæmia," and states further on that "oligocythæmia is not invariably accompanied by a diminution in the amount of serum-albumin (by which he means plasma—hypalbuminosis)."

If we go on we shall find that anæmia or oligæmia vera really means a diminution of the whole quantity of the blood, and that this condition can be subdivided into hydræmia, oligocythæmia, oligæmia sicca, and oligæmia hypalbuminosa. We have, then, three representative definitions: the one broad and general, including a diminution of any one, or all the constituents of the blood; a second, in which hypalbuminosis and oligocythæmia are the principal, if not the only factors; and a third, which makes oligocythæmia alone the characteristic feature. It seems to me that, from a purely practical standpoint, the latter is the best; we are not in a position to determine the whole quantity of blood in a living animal, nor, for more reasons than one, can we make a chemical analysis of blood in any individual case. But we can readily determine the number of red corpuscles in any patient, and, if it be admitted that hypalbuminosis and oligocythæmia go together in the great majority of cases, it will become unnecessary to make a chemical examination of the blood.

A search amongst the authorities for a definition of chlorosis puts us in a much sadder plight than did anæmia. One type of writers is, perhaps, best represented by Coupland in his excellent course of Gulstonian Lectures (*Lancet*, 1881), who says: "I believe chlorosis to be a form of anæmia depending upon similar changes, and, therefore, to be considered as falling under the head of idiopathic anæmia." It is but just to add that this author defines anæmia as that condition in which the essential feature is the reduction of the hæmoglobin. Zender (Virchow's *Archiv*, 1881) conceives chlorosis to consist in defective formation of red blood-corpuscles, both quantitatively as well as qualitatively, and adds, further on, that, as iron is diminished in the blood and not excreted, the fault must lie in defective absorption. Then we have authors like Strümpell (*loc. cit.*), who, defining anæmia as oligocythæmia, state that chlorosis is a term applied to the mild forms of essential anæmia, such as are most often seen in females at the time of puberty. Immermann makes the disease dependent upon a diminution of hæmoglobin, but is not willing to commit himself by stating whether this is absolute for a single red corpuscle or for the whole quantity of blood.

We now come to what seems to me to be the turning-point in the finding of a sharp, distinctive definition, which is to be found in Duncan (*Sitzungsberichte d. Acad. d. Wissenschaften*, Wien, 1867). As far as I know, he was the first to make the distinctive feature oligochromæmia characteristic for

[1] Read before the Association of American Physicians, September, 1889.

chlorosis—that is, in chlorosis we find the individual red corpuscle deficient in hæmoglobin. It will be readily seen that a deficiency in hæmoglobin would exist in any condition in which the number of red corpuscles is diminished; this would be called anæmia according to the definition we have accepted. But the red corpuscles being normal as to quantity and the hæmoglobin diminished, we would be justified in concluding that each individual red corpuscle carries too little hæmoglobin, and this condition would be called chlorosis.

Unfortunately for this definition, the term chlorosis is to be looked upon as an essentially clinical one; it is not going too far to state, I think, that by far the great majority of reported cases of chlorosis are not chlorosis at all. In Germany every other girl is called *bleichsüchtig* (chlorotic), the diagnosis being made by the people and then verified by the physicians; with us chlorosis is a comparatively rare affection, and yet no one doubts for a moment that there are just as many, if not more, anæmic girls in this country than in Germany. In Russia almost all women are said to be chlorotic, especially in the cities; even the lower strata of society are convinced that they have chlorosis. Five or six years ago a great tide of emigration swept from that country to ours; I had occasion to examine a great many of these women, and every case was one of anæmia and not of chlorosis. Within the last year I have seen an American girl who had been compelled to stay in St. Petersburg for several years; she was pronounced chlorotic there by an eminent physician; examination of her blood revealed oligocythæmia (about seventy per cent.) and a proportionate oligochromæmia. This girl was very anæmic, but, according to the conception which we would ask to be accepted, she was not chlorotic.

Another difficulty in the drawing of strict lines consists in the fact that both oligocythæmia and oligochromæmia may occur in the same individual, so that the term chloranæmia is one that is justified by observation of existing conditions. It is more than probable that anæmia is a forerunner of chlorosis in a great many instances, and, possibly, a very great number of cases occur in which there is a combination of both conditions.

As far as the causes for both conditions are concerned, it will be seen that almost every one put down for anæmia will hold good for chlorosis. Without entering into detail upon this division of the subject, it can be stated that sex, age, a peculiar composition of the blood, and certain vascular anomalies first pointed out by Virchow in 1870, are held to be especially characteristic for chlorosis. If we analyze each one of these causes, it will be seen that the latter two are the only ones to be found in chlorosis. While there can be no possible doubt that chlorosis is a disease of females at puberty, yet cases have been described in which chlorosis has been found in males, and a great many cases are upon record in which the disease has developed either earlier or later than puberty (as late as fifty-seven years, Cantrel). Here, again, the "elasticity" of the term chlorosis must be taken into consideration. In regard to chlorosis in males, if we read the report of the case given by Immermann (p. 532, *loc. cit.*), it will be seen, that this author has given us no positive proof at all that his case is not one of anæmia, although he warns against the too ready acceptance of cases of anæmia as chlorosis. The fact that this case was relieved by energetic chalybeate treatment is apparently looked upon by the author as convincing evidence that it was one of chlorosis. In cases of so-called school-anæmia we are accustomed to expect good results from removal from school and the administration of iron.

As to the age of patients, the process of sexual development has always been looked to as the time of most common occurrence of chlorosis; in anæmia this age also produces a great number of cases, but children and old people are subject to anæmia and, practically, excluded from chlorosis. For the explanation of this fact it became necessary to conceive of the existence of some physical anomaly in the sexual organs; lack of development, malformation, etc. The clinical fact that in some cases we find amenorrhœa, in some comparatively normal menstruation, and in others menorrhagia, ought to have been sufficient testimony to show that there was no constant genital factor, and, in some cases, none at all. Investigations upon the post-mortem table have verified these statements, and we, therefore, find the genitals well and normally developed in some cases, in others too great a development, and in others a deficiency. These changes are so varied as to the external genitals, the uterus, and the ovaries, that no causative relation can be established between these lesions and the disease. It is more than probable that the relation is that of effect to cause and not of cause to effect; in other words, that the lesions in the genital organs are due to chlorosis (or anæmia).

It will be seen by examining statistics that by far the greatest number of cases occur between the ages of fifteen and twenty-five—*i. e.*, decidedly after the time of the age of first menstruation, which is supposed to occur between the ages of twelve and fifteen years. Furthermore, the observation that an anæmic constitution is a very strong predisposing cause for chlorosis, has been made by almost every author; some authors, in their description, make cases of anæmia more intense and then call the condition chlorosis. It seems justifiable to conclude that a great many cases of chlorosis have their inception in ordinary cases of anæmia. The continued effort of menstruation and, possibly, the un-

accustomed loss of blood going on for a period of time extending over from three to ten years, in an anæmic patient having the peculiar metabolism of anæmia, seems to be sufficient to establish the condition we consider characteristic for chlorosis. Again, the fact must not be lost sight of that a comparatively slight cause may set up the condition of chlorosis in a female who has always been considered perfectly healthy. Yet, occurrences like these must be looked upon as exceptions.

The clinical characteristic of chlorosis lies in the peculiar changes in the blood—changes which have been denied by some authors, and the strict meaning of which has been accepted by few. In anæmia we have the red corpuscles as well as the albumins of the plasma reduced in quantity; frequently there is a change in size, shape, and quality of the corpuscles (Osler, Cartwright Lectures, 1886). The change in size of the red corpuscle is in the direction of production of a greater number of smaller corpuscles (microcytes). As a result of the reduction in the number of red corpuscles the hæmoglobin is correspondingly reduced in quantity. In pure chlorosis the number of red corpuscles is not diminished at all, or so slightly that the diminution may be ascribed to the method of enumeration. On the other hand, the tendency to the production of red corpuscles of larger diameter than normal (megalocytes) is especially well marked in chlorosis. While we do not fail to find an appreciable number of microcytes, the large number of megalocytes found is apparent upon very superficial observation. Malassez gives the average size of the red corpuscle in chlorosis as 8.29 μ (7.60 being normal), and the relative size as 1.09 μ (1 being normal). These changes, although present to a greater or less extent in every case of chlorosis, are by no means sufficiently characteristic to establish a diagnosis or to enable us to exclude other forms of alterations in the blood. The red corpuscle in chlorotic blood seems decidedly pale to one who has had the color of the individual corpuscle firmly impressed upon his mind. When we deal with large quantities of blood this is apparent to the untrained without any further remark, but the change under the microscope is just as appreciable when the comparison is made with healthy blood. When the blood is examined with the spectroscope or the hæmoglobinometer, the reason for this paleness is readily explained; we find a great diminution in hæmoglobin. But this is found in any form of anæmia, so that it becomes necessary to establish the amount of hæmoglobin in each individual corpuscle. In order to do this we must employ the fraction first suggested by Gowers, in which the numerator is the percentage of hæmoglobin, and the denominator the percentage of corpuscles. It is not necessary, before this Association, to point out the possibilities of errors in this computation. Gowers says of his instrument that it "is only expected to yield approximate results, accurate within two or three per cent." The more recent instruments are more accurate, possibly, but nevertheless errors are unavoidable.

It seems to me that one great source of error which has been overlooked in all these computations is the neglect of taking the average size of the red corpuscle into consideration. It is true that this is comparatively small when compared with an error of three per cent., yet it would be appreciable when we are dealing with a sample of blood in which the average size of the red corpuscle is very much increased. In order to correct this, the following computation could be made, A representing the average size of the red corpuscle of the examined blood, and B Gowers's fraction:

$$A : 7.50 :: B : x, \quad \text{where } x = \frac{7.50 \times B}{A}.$$

Thus, if we take a sample of blood in which, by Gowers's equation, the quantity of hæmoglobin in an individual corpuscle is estimated at $\frac{30}{60}$, and correct by the above formula, using Malassez's figure (8.29 μ), it will be found that the individual corpuscle contains only $\frac{27}{60}$ of hæmoglobin, certainly a decided difference. At the end, however, the point to be made in the establishment of the diagnosis of chlorosis is that the single red corpuscle contains less hæmoglobin than normal. It must be added that the amount must be greatly reduced, because of the fact that our methods of computation are not such as could be called mathematically precise, though sufficiently so for clinical purposes.

The difference in the quantity of albumins may be considered another distinctive feature between anæmia and chlorosis. It is said that in anæmia we always have hypalbuminosis, while in chlorosis this is absent. It must be confessed that the statements of authors are so contradictory upon this question, that a definite conclusion cannot be arrived at. It is necessary that this part of the subject be reinvestigated and then, possibly, a positive result will follow. The statement that chlorosis is a cytogenic affection and anæmia both a cytogenic as well as a general affection of the blood is one that, as yet, cannot be considered proven.

One respect in which chlorosis is said to differ materially, if not absolutely, from anæmia, consists in the pathological changes first described by Virchow. These changes can be briefly characterized as hyperplasia of the vascular apparatus—narrowing of the lumen of the aorta and larger arteries, as well as thinning of their walls. The heart itself is sometimes found small, at other times hypertrophied. According to this view, every case of chlorosis is congenital and must be due to some faulty develop-

ment of the mesoblast; it would permit us to state that chlorosis is always congenital, in some cases latent for years, while anæmia, in most cases, is acquired.

A great many objections have been raised against this view; they cannot "be considered as underlying every case of chlorosis or, at any rate, existing as a cause of the anæmia;" "no proof has been given that the diminution in size of the vessel has not followed upon diminution in the total quantity of blood" (Coupland, *loc. cit.*). The first of Coupland's objections certainly holds good; hyperplasia occurs in a great many males, in a far greater number than will be admitted by even the most enthusiastic defenders of male chlorosis, and, in proportion to the number of females attacked, it is found in a very small number of post-mortem examinations. The second objection—*i. e.*, that we may be dealing with an effect and not a cause—is one that is not easily proven; if it is an effect, it can certainly not be due to a "diminution of the total quantity of blood," for, when this does occur in chlorosis, it is not as great as it is in anæmia, and, probably, with this hyperplasia there frequently occurs a plethora. However this may be, to the best of my knowledge no author has been found who is willing to state that this condition of the bloodvessels is found in any other disease than chlorosis. Even if we are not disposed to look upon these changes as a direct cause, we must certainly be prepared to consider them as predisposing to chlorosis on account of the frequent coincidences of the two.

The relation of the symptoms of anæmia to chlorosis depends upon the conditions of the blood and the anatomical substrata. Given a case of anæmia in which there is only a reduction of hæmoglobin as a result of oligocythæmia, and a case of chlorosis in which there is a reduction of hæmoglobin as a result of oligochromæmia, and metabolism in both of these cases will be approximately the same. It is true that the patient with chlorosis will have a different facies; as the essence of the affection lies in oligochromæmia, the amount of reduction in hæmoglobin, if due to oligocythæmia simply, would be so great as to become a physical impossibility, inconsistent with life. But if, in anæmia, we have oligocythæmia as well as hypalbuminosis, which is said to be coexistent in the majority of cases, the metabolism must be different from that of a pure case of oligochromæmia. As a result of reduction in hæmoglobin we have simply a reduction in the process of oxidation in the body; at the same time the waste products are carried off and sufficient albuminous food is carried to the tissues by the plasma of the blood which is unchanged. In this way the general nutrition of the body is apparently not interfered with. Indeed, there may be, and there frequently is, an increased deposit of material in chlorosis, because oxidation is not sufficient to utilize the albumins of the plasma; the result of this process of suboxidation is a deposit of fat, all of which Immermann calls the "nucleus" of the clinical differences between anæmia and chlorosis.

Hypalbuminosis and oligocythæmia produce an entirely different result; as before, we have the same factor, suboxidation, but we have, in addition, a deficiency in supply. Furthermore, those functions of the plasma otherwise than nutritive are seriously interfered with. Its physical conditions are changed, it does not serve the processes of secretion and excretion as it should, and, being full of excrementitious material, the result is the retention of these substances, the production of fever, etc. In mild cases of anæmia there is produced a loss in weight, in severe cases there is produced that condition which we call marasmus. In chlorosis very little, if any, loss of weight occurs; very frequently the opposite is brought about by a too great supply, and especially by the presence of too much CO_2, preventing the decomposition of the fats. But when anæmia is associated with chlorosis we have a very unfortunate combination, especially where there is a great amount of hypalbuminosis. These are the cases in which the development of pernicious anæmia as a direct consequence of chlorosis can be readily explained. The chlorosis produces oligocythæmia and hypalbuminosis as a result of deficient external food-supply; these two produce the metabolic combination stated above; and, finally, we have established a *circulus vitiosus* into which it seems impossible to break. But these combinations must certainly be looked upon as of extreme rarity.

Unless we believe Virchow's anatomical lesions to belong only to chlorosis, there exists no difference between the symptoms of the two diseases. When these are present they manifest themselves by the ordinary objective signs of whatever change there may be in the heart. We have a normal heart, one that is too small, or one that is larger than normal. The most interesting change that we find is the dilatation of the left ventricle. Considering the hæmic bruits that occur in the heart, it sometimes becomes quite difficult to state whether or not we are dealing with a valvular lesion. The dilatation of the left ventricle may be transitory in its nature, depending, as it does, for its existence upon the quantity of blood to be pumped through the narrowed arteries.

Reference must also be made to symptoms on the part of the nervous system; these have been made one of the characteristics for chlorosis. Hysteria and hysterical conditions are of such common occurrence nowadays, that it seems impossible to make any one condition responsible for them. A careful analysis of female anæmic cases would, I think, demonstrate the fact that just as many of these are

hysterical as in the same number of chlorotics. Before making a careful examination of the blood, it would be very risky to make the diagnosis of oligochromæmia in a patient who is both anæmic and hysterical.

Lastly, we have to consider the therapeutic relations of both diseases. While the reasoning of *ex juvantibus* is certainly justifiable under certain circumstances, it seems to me to be strained in its application by Immermann. He speaks of specific medication, and says that the ease with which iron controls the symptoms of chlorosis is "characteristic" for the latter disease—as "a fortunate relation, which is not found, to the same extent, in any other form of anæmic process, and which, therefore, deserves to be considered as one of the essential peculiarities of the trouble." The degree of success and the time in which it follows the use of chalybeates are to be distinctive for chlorosis as opposed to all other anæmic processes. From a scientific standpoint, this certainly seems a very weak argument to offer, and one that depends, for its verification, upon the individual employing it. To what extent must improvement follow, and in what time, before one case can be called chlorosis and another anæmia? The fact must not be lost sight of, that a great many cases of anæmia are just as much improved by iron as are cases of chlorosis. Although the indiscriminate use of iron in anæmia must be deprecated, yet, upon the whole, iron is just as much looked upon as a specific in anæmia as in chlorosis. As we are led to expect from the essential symptoms of chlorosis, iron would be indicated in every case, and very few authors will be found who do not confirm this therapeutic indication. While, then, we would not be willing to separate anæmia from chlorosis, we are justified in the statement that iron ought to be given in every case of chlorosis, on account of the rapidity and intensity of the chalybeate effect.

Where, in anæmia, we try to remove the cause and institute causal treatment, we are satisfied, in chlorosis, with removing that symptom which is the essential of the disease, either on account of the fact that we are ignorant of the first cause, or on account of our inability to remove it. It has been repeatedly demonstrated that this can be done, and, furthermore, that the removal of this essential symptom is followed temporarily by complete recovery. Whereas, in anæmia, treatment is followed by complete recovery or complete failure, iron in chlorosis will always result in amelioration, even if we cannot remove the tendency to relapses. There are very few cases of chlorosis, even those with the lesions of Virchow, that are not benefited by the administration of iron in sufficient quantity. In a great many cases of anæmia the use of iron would be followed either by negative or by bad results.

AGAINST SECTARIANISM IN MEDICINE.[1]

By EDWARD JACKSON, M.D.,
PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC.

The idea on which the following argument is based has been thus expressed by the late Prof. George B. Wood: "Conscientious convictions should be respected, even though based on ignorance and delusion, and so prone is the human intellect to every kind of aberration that we may readily admit the possibility of an honest conversion from orthodoxy in medicine to the wildest creed that ever sprang from a deluded imagination."[2]

There are many things to engender mutual distrust among practitioners of medicine, and set them against one another. Beside the rivalry, which often seems to preclude the possibility of kindly relations in every walk of life, there is much that is peculiar to our profession. The dogmatic way in which a professional opinion must be stated to make it clearly intelligent to the patient, is often at variance with the meagreness of the scientific facts that could be adduced to support it, and we must often speak positively of matters concerning which there can reasonably be great doubt; the demands of the sick-room for positive action are so opposed to the nice balancing of scientific probabilities—that the management of each case lays the physician open to controversial attack. Then, too, in the domain of medicine, so much is half-knowledge and surmise, there is so much room for honest difference of opinion, that uniformity cannot be looked for, while the issues that hang on the correctness of opinion are so important as necessarily to elicit strong feeling, making diversity of view particularly liable to end in strife.

But there are most weighty reasons why strife should be prevented. There is no attitude of mind more unsuited to the perception of truth, the observation and correct interpretation of phenomena, the exercise of the best judgment, than the controversial. The medical controversies of all times illustrate the evils of intolerance, the benefits of coöperation. Whether we study the struggle of the empirics and methodics, of Cullen and Brown, of Rush and most of his prominent contemporaries, or the controversies over the tubercle bacillus, or the treatment of pyosalpinx in our own societies, the lesson is the same. All experience teaches that the condition of professional harmony and coöperation which renders the skill and learning of each available for the aid and instruction of all, furnishes the most efficient service to the community, and conduces most to the welfare, influence, and honor of the profession.

[1] Read before the Philadelphia County Medical Society, September 25, 1889.

[2] Introductory Lectures and Addresses.

To associate all members of the medical profession in hearty good feeling and earnest coöperation has been the dream, the desire, the high purpose of our best leaders in professional organization. Such was the purpose that founded the American Medical Association, shaped its code of ethics, and drew to its support the best part of the profession. That purpose is fulfilled in so far as our organization is made to include every worthy member of the profession, and is defeated in so far as any are excluded. If, as a branch of the American Medical Association, we should stand for any one peculiar idea, it is for that of the organization of the whole profession into one body, as opposed to that of its organization upon lines of medical dogma into separate and antagonistic sects.

In the process of organization it became necessary to indicate who should, and who should not, be regarded as members of the profession. But the only exclusive clause in our code of ethics reads: "No one can be considered a regular practitioner or fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology, and organic chemistry." The same paragraph of the code says: "A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements," but gives no definition of a regular medical education other than such as may be inferred from the foregoing passage, viz., that it shall not be confined to the study of a single dogma, or set of dogmas, or neglect the aids of anatomy, physiology, or organic chemistry.

There is, however, a tendency to narrow the interpretation of the word "regular" until it shall no longer convey its proper meaning, namely, that the person to whom it is applied has successfully completed a full course of medical study; but merely that he belongs to a certain school or sect in medicine, which differs from other schools or sects mainly as to the importance of certain medical dogmas or doctrines.

As generalities are so easily misunderstood or misinterpreted, let us take a special case. In this city there is an institution called "The Hahnemann Medical College and Hospital." I certainly do not share the feeling that led to the naming of it from Hahnemann. Still it is conceivable that, in spite of its name, the study of anatomy, physiology, or organic chemistry will yield within its walls very much the same results as elsewhere; and the only fair way to judge whether or not its graduates have received a regular medical education is to examine its curriculum, and to find out how thoroughly that curriculum is enforced.

In judging how the compilers of our code of ethics used the phrase "a regular medical education," it should be borne in mind that at the time the code was drawn up there was no homœopathic medical college in existence. An institution to teach homœopathy had been started a few years before at Allentown, Pa. It soon became extinct. But it had conferred the degree, not of Doctor of Medicine, but of Doctor of Homœopathia, and its curriculum could not be fairly said to offer a regular course of medical instruction. At this time, too, the homœopathic medical societies consisted often largely of laymen, and a large proportion of those who were professing to practise homœopathy were as destitute of any medical education as many of the faith-curers of to-day. Such being their lack of qualification for medical practice, they, of course, fell under ban as irregular practitioners. But time that changes all things has wrought a transformation in the homœopathist that many of us have not fully realized. Consider the requirements for graduation in the Hahnemann Medical College, as set forth in its last annual announcement, and I know of no reason for doubting that these requirements are lived up to as well as are the corresponding requirements in most of the medical schools that we all agree are "regular." The course is a three years' graded course, the length of term six months. In anatomy, two courses, four lectures a week, and the text-books are Gray's and Wilson's. In practical anatomy, one course, one lecture a week; text-books, Holden's and Allen's. In physiology, two courses of lectures, three a week; text-books, Dalton and Foster. In general pathology, two courses, one lecture a week, with the use of Green's text-book. In chemistry, two courses, three lectures a week, and the text-books of Draper, Ganot, Fownes, and Attfield, with a course in practical chemistry, including laboratory work. The student is recommended to study: in surgery, the works of Bryant, Erichsen, Holmes, Gross, Agnew, and Smith; in obstetrics, those of Playfair and Lusk. Even for practice of medicine he is sent to Loomis, Roberts, or Pepper's *System;* for therapeutics, to Stillé and Maisch's *Dispensatory;* for pharmacy and toxicology, to the *U. S. Pharmacopœia*, Mann on *Prescription-writing*, Taylor on *Poisons*, Wood's *Materia Medica*. But the list need not be further extended. Suffice it to say that of all the text-books this institution recommends to its students, about two-thirds are of authorship unquestionably orthodox, while the remainder are largely compilations from sources equally creditable. Can it be claimed that those so educated have based their practice "on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology, and organic chemistry?"

For them to pretend that they practise an exclu-

sive system of medicine is an imposture. But for us, by our attitude toward them, to support that pretence is imbecility. We do support it if we exclude them *en masse*, giving as our reason their system of practice.

But when it is admitted that they are practitioners who have received a regular medical education, it is claimed that they should be ostracized for false pretence. Let those who are guilty of false pretence feel such disapprobation. But the penalty may be made most effective by confining it strictly to those who have deserved it; and the guilt or innocence is to be determined separately for each individual case. I believe those connected with the institution I have referred to, do not place upon sign, or card, the words homœopathist, homœopathic doctor, or other words of similar import, and that they discourage such a practice. The announcement from which I have quoted bears the motto: "*In certis unitas, in dubiis libertas, in omnibus charitas.*" The most prominent adherents of the doctrine of "like cures like," publicly deny that their practice is based exclusively upon it. Not long ago several of them resigned their positions in one of their hospitals in this city, rather than practise it exclusively in an institution founded for its illustration and propagation. The societies into which these practitioners have banded themselves make no profession of an exclusive dogma. Some, as the American Institution of Homœopathy, require no expression of belief whatever.

Much of what has been said of this group which is commonly regarded as made up of irregular practitioners may, with slight modification, be said of another, the so-called eclectics. If I can understand the profession made by both of these sects, it is that they take experience as their teacher and guide. If the experience they follow leads them in certain directions to absurd conclusions, looking back upon the history of medicine I cannot therein find ground for their exclusion from all professional recognition. "Conscientious convictions should be respected."

The medical profession can never afford either to prescribe or proscribe opinions for its members. Whenever you divide medical practitioners upon a line of dogma, whether that line be to include the believers in a certain doctrine, or to exclude them, you introduce with all its evils sectarianism. Let us hope that the American Medical Association and its code of ethics, designed to bind together the profession into one harmonious whole, shall not, by false interpretations and failure to understand its catholic spirit, be suffered to hinder such a union.

Women's Medical College of Cincinnati.—Dr. George A. Fackler, for a number of years Assistant to the Chair of Materia Medica at the Medical College of Ohio, has been elected Professor of Materia Medica in the Women's Medical College of Cincinnati.

AN ETHICAL QUESTION.[1]

BY SOLOMON SOLIS-COHEN, A.M., M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS, PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE.

IT is true that no man is so sure of the accuracy of his knowledge or the wisdom of his judgment, that he can refuse to respect the honesty with which others maintain opinions from which he may dissent. Nevertheless there are certain facts of nature which have passed beyond the region of opinions into that of established truths: there are certain methods which the well-settled judgment of scientific men requires to be pursued in our interrogation of nature for yet other truths. To respect the honesty with which a man entertains beliefs contradicted by all that is known of natural law, and by the collective experience of mankind, is one thing: to dignify manifest absurdities with the name of scientific opinion, is quite another.

The Rev. John Jasper and the Grand Llama of the Trans-Baikal are honest enough in their opinion that the sun makes a daily circuit about the earth; but scientific men and the world of thought they influence, have long since accepted as final the contrary teaching of Copernicus and Galileo, and will not now intermit more important labors to debate the question.

But though we may respect the man who honestly errs, we are not called upon to entertain any such feeling toward him who is ignorant through wilfulness; and as for him who, knowing truth, wears for hire the livery of error, even divine charity can ask us to do no more than withhold judgment.

I have no desire to attack the opinions or the characters of any body of men—certainly not those of the homœopathic practitioners of this city, many of whom I have the pleasure of knowing as cultivated and honorable gentlemen. When, however, the charge of illiberality is made against the members of this Society and of the profession of medicine, because they refuse to recognize certain practitioners as entitled to the honored name of physician, it becomes proper, in repelling that charge, to exhibit plainly the reasons which make such recognition impossible.

The question interjected by Dr. Jackson into the deliberations of this Society, when stripped of the sophistry with which it has been overlaid, is a very simple one. Disregarding the attempts to erect fine distinctions upon unsubstantial grounds, the gist of the matter may be tersely and bluntly stated as follows: Can physicians conscientiously consult with, or recognize as members of their profession, prac-

[1] Read, as a reply to Dr. E. Jackson's paper on "Against Sectarianism in Medicine," before the Philadelphia County Medical Society, September 25, 1889.

titioners of that system of therapeutics known to the public, in the language of its founder, as "homœopathy"?

Proceeding to discuss this as a casuistical question, there are two hypotheses to be taken up in turn, upon each of which an independent answer must be given.

The first hypothesis is, that all who are called homœopathists are what they profess to be, and allow the public to consider them; namely, practitioners of homœopathy: homœopathy being the system of therapeutics invented by Hahnemann, and asserted by its founder (*Organon*, § 53) to be based upon an "eternal and unerring law of nature," expressed in the formula "*similia similibus curantur*" (or *curentur*). Upon this hypothesis I shall show by citations from the most authentic and authoritative exposition of homœopathic doctrine and practice, namely, Hahnemann's *Organon*, that consultation between physicians and homœopathists could be productive of no result; for there is no possible common meeting-ground. It is not a mere question of the expediency of this or that therapeutic measure in a given case, such as often comes up in discussion between physicians, but one of fundamental difference in principle, making agreement as to practice impossible—if both be honest. Their doctrines and their practices, whichever be right and whichever be wrong—a question which it is needless to discuss—are mutually antagonistic and destructive. From this point of view alone, and leaving out of consideration the larger ethical questions of public duty, it is obvious that a consultation would be condemned from the first to be a barren union, and must therefore be an immoral one. The question as to its permissibility will thus be at once answered in the negative; and it has so been answered by sincere homœopathists.

The second hypothesis is, that men who profess to be homœopathists, who allow the public to consider them such, and who accept the fees of persons desiring homœopathic treatment, are not what they profess to be, but something else. It matters not what that something else is; so long as it is not consistent with homœopathy, it is something that contradicts the profession made to the public.

Upon this hypothesis — which I do not allege represents the existing state of affairs, but which, if I understand Dr. Jackson aright, he distinctly declares to be the case so far as concerns the Managers of the Hahnemann Medical College of Philadelphia—I shall contend that there is a very important question of public honor and private honesty involved; and that until it can be shown that it is right to take money or other valuable considerations under false pretences, no honorable man can consult with practitioners of this type—if any such practitioners exist—for he would, by so doing, become accessory to a fraud. Let me repeat, in order not to be misunderstood, that I do not assert that anybody whatever is guilty of the false pretence of professing to be a homœopathist while in reality he is something else. I shall show by citations from the gospel of homœopathy—namely, the *Organon* of Hahnemann—what homœopathy is. Then, if the state of affairs described by Dr. Jackson is actual, and he is not laboring under a misapprehension as to the facts, it will become self-evident that the practitioners whom he describes have been refused the name of homœopathists by the one who had the best right to define that name;[1] and the question as to the propriety of consulting with them will again be answered in the negative.

My propositions, then, are three:

1. Either the so-called "new-school physicians" are what they profess to be—homœopathists—or they are not.

2. As to the honorable men who are what they profess to be: We cannot honestly consult with them, nor do they wish to consult with us—because consultation would be fruitless.

3. As to the not-honorable men who are not what they profess to be: We cannot honestly consult with them, because we would become participants in an act of deception.

This is the issue as I understand it, freed from glossing and concealing verbiage. Truth requires it to be frankly stated and as frankly met.

To prove these propositions I must establish two things:

1. That the practitioners in question profess to be homœopathists, or "new-school physicians."

2. That the principles and practice of homœopathy, as set forth by competent authority, are such as to be utterly irreconcilable with the principles and practice of medicine and with the sciences upon which medicine is founded, as these are understood by the great body of modern physicians and by the members of this Society.

The first of the facts I must establish, I did not, until to-night, understand to be denied by any one. It has seemed to me as much a matter of public knowledge, as the fact that President Harrison professes to be a member of the political party called Republican, and that ex-President Cleveland professes to be a member of the political party called Democratic; that the Archbishop of Canterbury is a dignitary of the Anglican Church, and the Cardinal at Baltimore, of the Roman Catholic Church. For

[1] See a paper by Edward Bayard, a homœopathist by conviction and not "for revenue only," entitled "Plea for Pure Homeopathy against Eclectic Homeopathy." Proceedings in the Homœopathic Medical Society of the County of New York, on March 8 and 13, 1878.

the sake of completeness of proof, however, let me cite these facts: There is in existence a "Homœopathic County Medical Society" in Philadelphia, and a "Homœopathic State Medical Association" in Pennsylvania. Members of these bodies succeeded in defeating the efforts of this Society, and of the Medical Society of the State of Pennsylvania, to secure the passage of an act establishing a State Board of Examiners and Licensers, by alleging the existence of separate and irreconcilable "schools of medicine," and thus securing the adoption of an amendment providing that the majority of the proposed Board should not be adherents of any one "school." Not only does the Hahnemann Medical College connect itself by its name with the author of the *Organon of Homœopathic Medicine*, in whose mystic, metaphysical brain the strange delusion originated; but it distinctly recognizes as its associates other homœopathic colleges, and accords their students and graduates such privileges as colleges of medicine accord to students and graduates of colleges recognized by them. Furthermore, I have never heard, nor do I think Dr. Jackson has ever heard, of cases or fees having been refused by the professors or graduates of the Hahnemann Medical College on the ground that patients desired the services of homœopathists, while said professors and graduates were not homœopathists. Nor has there been any public announcement that the Hahnemann Medical College is not a homœopathic college, or that its professors or graduates have realized the errors of homœopathic ways and have repented and abandoned them.

If, then, the case of Dr. Jackson rests upon the fact that the Faculty of the Hahnemann Medical College and its graduates are not professedly homœopathists, I respectfully submit that the very parties concerned would not endorse his special plea, and it consequently falls to the ground without further waste of words. Until the teachers and practitioners in question publicly repudiate homœopathy, I cannot see why we should assume that they have clandestinely done so. And until they do repudiate homœopathy, as I shall show in a moment, a Surgeon-General's Library of scientific text-books could not neutralize the absurdities to which its profession commits them.

I have devoted to this subject much more time than it deserves, in order to prevent misunderstanding of the position. I confess, that to carry on my argument I must establish the fact that the profession of homœopathy is made by certain persons. I claim that I have established that fact by citing certain matters of public knowledge. Dr. Jackson must either admit that I have established this point, or he must frankly meet it and show that these persons neither actively profess to be homœopathists nor tacitly allow their patients and the public so to consider them.

Secondly, I must show that homœopathy and scientific medicine are absolutely irreconcilable; and I must show this upon unimpeachable authority.

It is neither my purpose to defend those against whom the inventor of homœopathy directed his invective and his sarcasm, nor to detract from his possible[1] services to medicine in attacking some palpable errors of his time. Nor do I wish to debate the question of the truth or error of the homœopathic doctrine. To waste time in demonstrating before this body the fallacies and gratuitous assumptions upon which that doctrine is founded, would be as superfluous as it is needless to my argument. For whether the so-called "law of homœopathic cure" be a profound truth or an insane delusion, all that I need show is its incompatibility with what we recognize as sound teaching concerning the nature of disease, the action of remedial agents, and the manner in which the physician should proceed in investigating the one and applying the other.

If the authority to which I shall refer for every step in this proof is not beyond cavil, then, indeed, may we at once admit that the moon is made of green cheese, that two and two never did make four, and that words have no meaning. It is the sacred scripture of the great prophet of the "new-school of medicine"—Samuel Hahnemann's *Organon of Homœopathic Medicine*, in an authorized translation,[2] edited by the prophet's greatest disciple and apostle in America, C. Hering, and certified by the "Chairman of the Board of Directors" of the "Academy of the Homœopathic Healing Art," at Allentown, Pa.

If I am not in error, the *Organon* of Hahnemann still holds an honored place as a text-book at the Hahnemann Medical College of Philadelphia, as it does at the homœopathic colleges of other cities.

Time necessitates limitation of the number of quotations,[3] and the selection of the most characteristic. It will be impossible to cite *verbatim* the full text of every section to which reference may be made; but wherever I have condensed the loose-jointed and bewildering verbiage, I have scrupulously endeavored to be fair and correct.

From the *Organon* of Hahnemann I purpose to show four things, any one of which is fatal to the possibility of fruitful consultation.

1. Homœopathy as expounded by Hahnemann,

[1] Possible, but exceedingly problematical; inasmuch as he inveighed indiscriminately against error and truth, bad practice and good practice; and the substitute he offered has been proved worthless.

[2] New York, Wm. Radde, 1849.

[3] For the same reason no reference has been made to the excellent expositions of the fallacies of homœopathy by various writers.

its inventor, is exclusively a system of drug-therapeutics; explicitly renouncing the aid of the *vis medicatrix naturæ*;[1] and denouncing the study of anatomy, physiology, pathology, etiology, semeiology, nosology, and diagnosis.

2. It is an arbitrary and exclusive system; inflexible; and claiming to be infallible.

3. It expressly prohibits the endeavor to interpret morbid symptoms as indications of changes in the structure or functional activity of definite tissues and organs; declares that an all-wise Providence has denied to man the power of learning what takes place within the human body; with logical consistency rejects the attempt to direct treatment against definite pathological conditions and processes or their dangerous consequences; and fixes attention upon the symptoms alone, independent of their origin, as constituting the whole of the disease, and affording the sole indication for treatment.

4. The doctrine of *homœopathia*—or the casting out of "natural diseases"[2] by artificial diseases closely resembling them, but excited by drugs—is inextricably bound up with the practice of infinitesimal dosage.

If these points be established, the logical inference will be not only the utter impracticability of consultation between physicians and genuine homœopathists; but also that those who make diagnoses—direct treatment to the production of definite effects upon particular tissues or organs—give any other than "homœopathic" remedies—refrain from the use of drugs in any case—or give drugs in any other than infinitesimal dosage—are not true homœopathists. If any such profess to be homœopathists, we will be compelled to conclude that they are either deliberate deceivers or, at best—in the language of Hahnemann—members of "the new mongrel sect" who try to "find a pretext everywhere for . . . exceptions to the general rule, in order to introduce their allœopathic palliatives, with other mischief of a like character, merely to save themselves the trouble of searching for suitable homœopathic remedies for every case of disease—one would say, to save themselves the trouble of being homœopathic physicians, though they wish to be considered such. But," continues the prophet, whose hearty contempt for such insincerity provokes admiration, "their deeds will follow them; they are of little moment."[3]

I. Homœopathy is exclusively a system of drug-therapeutics.

The introduction to the *Organon* of Hahnemann consists principally of denunciations of all medical practice prior to, or differing from that of, the author; and especially of the efforts of physicians to discover the causes of disease, in order to direct treatment, where possible, to the removal of those causes. Nothing, according to Hahnemann, is more vain and irrational than to endeavor to seek out the cause of disease. "It was the boast of the former schools of medicine,"[1] he says, "that their doctrine alone deserves the title of 'rational art of healing,' because it was pretended that they alone sought after and removed the morbid cause and followed the traces of nature herself." A vain boast, because "by far the greater number of diseases [are] of dynamic origin as well as of a dynamic nature, and their cause therefore [does] not [admit] of discovery to the senses." Among the irrational procedures committed in this foolish search after causes, he especially condemns the habit of "comparing, on the one hand, the normal state of the parts of the dead human body (anatomy) with the visible changes which those parts had undergone in subjects that had died of disease (pathological anatomy), and on the other, the functions of the living human body (physiology) with the endless aberrations to which they are subject in the various stages of disease (semeiotics, pathology), and drawing from thence conclusions relative to the invisible manner in which the changes are brought about in the interior of man when in a diseased state."[2]

Thus if—together with etiology—anatomy, physiology, pathological anatomy, semeiology, and pathology by name, and diagnosis by implication, are denounced as senseless and misleading, there is little left of medical science; and of its art, simply applied therapeutics. That this is the most important to the patient is true; and it is the goal to which our studies of normal and morbid anatomy, of physiology, pathology, and other sciences, are to lead us; but surely none here present will subscribe to the doctrine that the goal can be reached by any other road than that which the inventor of homœopathy so explicitly rejects and denounces.

One or two additional citations will serve to show more clearly the significance for our second main hypothesis, of this position of Hahnemann's. Meaning to be satirical, he says of physicians: "The sublime project of discovering . . . some internal and invisible cause of disease resolved itself . . . into a search, guided onward by the symptoms, after that which they might term to be the generic character of the existing malady. They endeavored to find out whether it was spasm, debility, or paralysis, fever or inflammation, induration or obstruction in

[1] *E. g.*, op. cit., pp. 40, 42, *et seq.*
[2] The two diseases fight it out, and the patient escapes.
[3] Note to § 67, ed. cit., p. 132.

[1] Ed. cit., pp. 26 and 27.
[2] The context, which I have omitted, denounces, it is true, some particular conclusion said to be thus reached; but our concern being only with the explicit condemnation of the method, it is of no moment whether the conclusion be or be not truthfully stated or justly criticised.

some one of the parts; excess of blood (plethora) or increase or deficiency of oxygen, carbon, hydrogen, or nitrogen in the fluids; exaltation or depression of vitality in the arterial, venous, or capillary system; a defect of relative proportion in the *factors* of sensibility, of irritability, or of nutrition."[1]

Allowing for the animus of the author, for changes in terminology, and for the progress of science, this would describe with a sufficient degree of accuracy the course still pursued by the intelligent physician in the endeavor to reach a diagnosis. To Hahnemann, however, such a course was fit subject for ridicule, and in a foot-note he says: "Every physician adopting a treatment of such general character"—that is to say, every physician who seeks to make a diagnosis, or to arrive at a knowledge of the morbid changes in the organism which he is called upon to combat—"however unblushingly he may affect to be a homœopathist, is and always will remain a generalizing allœopathist, as without the most special individualization *homœopathia* has no meaning." Surely no language can be plainer than this!

This denunciation of diagnosis and nosology, following, as it does, the explicit rejection of anatomy, physiology, and the other branches of medical science, and showing the complete dependence of the whole homœopathic system upon a deliberate shutting out of the light, becomes readily understood upon looking further into the peculiar theories of Hahnemann. He assumes the existence of an "immaterial vital principle pervading the physical organism" (§ 11). "It is solely the morbidly affected vital principle which brings forth diseases[2] (§ 12)." "The vital principle as a spiritual dynamis" (whatever that may be) "cannot otherwise be assailed and affected than in a spiritual (dynamic) manner; neither can such morbid disturbances be removed by the physician, except in like manner by means of the spiritual (dynamic virtual) countervailing agency of the suitable medicines acting upon the same vital principle" (§ 16).

Here we have not only the affirmation of the spiritual nature of disease, of its causes and of its cures—explaining the futility of the rejected studies which concern themselves with the material body, and its material morbid changes—but also the distinct assertion that diseases can only be removed by medicines; while again and again, throughout the introduction, and in a mass of foot-notes to various sections of the *Organon*, are violent denunciations of the idea of trusting in any degree whatever to the efforts of nature, or of accepting as a guide to therapy indications derived from a study of the natural history of disease. Let me cite one of the mildest of these maniacal outbursts: "The miserable and very imperfect attempts which the vital powers make to assist themselves in acute diseases, is a spectacle that ought to excite man to use all the resources of his learning and wisdom, to put an end, by a real cure, to this torment which nature herself inflicts. If nature cannot cure, homœopathically, a disease already existing in the system, by the production of a fresh malady *similar* to it (§§ 43–46)—a thing not often in her power to effect (§ 50) . . . we see nothing but painful and often dangerous efforts of the constitution to save itself at all hazards, efforts of which death is most frequently the result."[1]

I have thus, I believe, established the proposition that homœopathy, as expounded by Hahnemann; is exclusively a system of drug-therapeutics.

II. It is an exclusive system, arbitrarily devised, inflexible, and claiming infallibility.

"Observation, reflection, and experience have unfolded to me," says Hahnemann, "that in opposition to the old allœopathic method, the best and true method of cure is founded on the principle *similia similibus curantur*. To cure in a mild, prompt, safe, and durable manner it is necessary to choose in each case a medicine that will excite an affection similar to that against which it is employed. Until the present time no person has ever inculcated this homœopathic mode of treatment, and yet more, no one has ever put it into practice. . . . In all ages the diseases which have been cured by medicines . . . have yielded, although without the knowledge of the physician, to a homœopathic remedy . . . a remedy in itself capable of exciting a morbid state similar to that whose removal it effected."[2]

Having assumed that for every disease there must be a remedy—and that this remedy is a medicine—he further assumes that medicines can accomplish the cure of disease, only in one of three ways: (1st) by exciting a disease similar to the natural disease, which he calls "homœopathy;" or, (2d) by exciting a disease opposite to the natural disease, which he calls "antipathy;" or (3d) by exciting a disease which is neither similar nor opposite to the natural disease; and this, which he incorrectly states is the common practice of physicians, he dubs "allœopathy" (§ 53). Antipathy and allœopathy have been tried up to his time and have failed; consequently, homœopathy must be the only true method (§§ 24, 61, *et al.*).

The "discovery" of the homœopathic "law" was not the result of experience, but, according to his letter to Hufel,[3] was reached by reflection,

[1] Ed. cit., p. 28.

[2] Compare also this gem from the introduction (ed. cit., p. 35): "Diseases will not, out of deference to our stupidity, cease to be *dynamic aberrations which our spiritual existence undergoes in its mode of feeling and acting.*"

[1] Ed. cit., p. 42. [2] Ed. cit., pp. 59, 60.

[3] Cited by Henderson: Homœopathy Fairly Represented. Phila., 1854. Pp. 116 et seq.

before any experiment had been made. "God," he says in effect, "made diseases; God must also have made a remedy for each disease; and He indicates its use by giving it power to produce in healthy persons symptoms like those of the disease it is intended to cure."

I have used the expression "exciting disease" in referring to Hahnemann's exposition of drug action. It is his own language. In many cases it is direct, as in § 29, where he says in conjectural explanation of the homœpathic cure, "The natural morbific power terminates . . . while the *medicinal disease*, which usurps its place, being easily subdued by the vital power, is . . . extinguished in its turn." But it is also implied throughout when he speaks of the symptoms produced by drugs, because it is one of his fundamental principles that, so far as human observation is concerned, symptoms and disease are one and the same (§§ 11–21).

Our way is now clear to set against one another certain fundamental propositions of Hahnemann's: "Every curable disease is made known to the physician by its symptoms" (§ 14). "The physician has only to remove the totality of the symptoms and he has cured the entire disease" (§ 17). "The totality of the symptoms is the sole indication in the choice of the remedy" (§ 18). "The morbid symptoms which medicines produce in healthy persons are the sole indications of their curative virtues in disease" (§ 21). "The homœopathic method, or that which employs medicines producing symptoms similar to those of the malady, is the only one of which experience proves the certain efficacy" (§ 24).

"It is as impossible that there should be any other true method of curing dynamic diseases . . besides homœopathy, as that more than one straight line can be described between two given points" (note to § 109). "By this method alone can we cure diseases in the most speedy, certain, and permanent manner, because it is grounded upon an eternal and unerring law of nature" (§ 53).

These citations should be sufficient to establish the second thesis—namely, that homœopathy is an exclusive system, that it is arbitrarily devised, that it is inflexible, and that it claims to be infallible. "An eternal and unerring law of nature" can admit of no exception and no failure. Upon the surface of the earth, at the centre of the sun, or at the extremest limit of the orbit of Neptune, gravitation acts with a force proportional to mass and inversely as the square of distance. In the tropics, as in the arctic regions, like poles of magnets repel and unlike poles attract. The atomic weight of carbon, the valence of hydrogen, differ not in the brain of man, or in the fossil leaf. These are matters governed by "eternal and unerring laws of nature." If the "law of homœopathic cure" is entitled to be called a law, it must be equally infallible and exclusive to-day, as when Hahnemann penned his sweeping claim. Maintenance of that claim precludes any modification in principle or practice; "More than one straight line *cannot* be described between two given points." Abandonment of the claim is abandonment of homœopathy.[1]

III. Homœopathy forbids diagnosis[2] and condemns the attempt to direct treatment to definite ends, etc.

It follows from what has been quoted, and is repeatedly, explicitly, and elaborately stated by Hahnemann, that the sole function of the homœopathic practitioner, after having inquired minutely into the symptoms of the case before him, is to select from among the various medicines known to him, that one the "disease-producing power" of which most closely corresponds to the "natural disease" (§§ 83 et seq., 146 et seq.). This is the sole and infallible method (§ 109). If additional evidence is required on this head, the following should suffice:

"There is nothing for the physician to cure in disease but the sufferings of his patient, and the changes in his state of health which are perceptible to the senses—that is to say, the totality or mass of the symptoms by which the disease points out the remedy it stands in need of; every internal cause that could be attributed to it, every occult character that man might be tempted to bestow, are nothing more than so many silly dreams and vain imaginings" (§ 70). "Just as little as we can witness what is passing in the interior of our bodies in a healthy condition—and as certainly these processes remain concealed from us as they lie open to the sight of Omniscience—just so little can we perceive the internal operations of the animal frame, when life is disturbed by disease."[3]

"They" (physicians) "likewise suppose that by removing a polypus by ligature, extirpating a tumefied gland . . . dissecting out the insulated cyst of a steatomatous or meliceretous tumor, operating for aneurism, fistula lachrymalis, or fistula in ano, amputating a cancerous breast . . . etc., to have cured the maladies in a radical manner and destroyed their cause. . . . *But mark what follows.* New forms of disease . . . infallibly manifest themselves sooner or later . . . being always worse than the primitive affection. . . .

---

[1] See Declaration of Homœopathic Principles; with Comments by Adolph Lippe, dated Philadelphia, Feb. 4, 1878; and Protest against a certain Resolution adopted by the Homœopathic Medical Society of the County of New York; signed by C. Lippe, E. Carleton, Jr., S. Baruch, et al. Reprinted from *The Organon*, Liverpool, April, 1878. The resolution, *which was afterward rescinded*, declared that belief in the principle *similia similibus curantur* "does not debar us from recognizing and making use of the results of any experience;" and it is protested against, because, "*not being in accordance with the teachings of Hahnemann*, [*it*] *cannot be accepted by Homœopaths.*"

[2] See especially § 100.

[3] Introduction, foot-note, ed. cit., p. 42.

These ought to undeceive them and prove that the evil has an immaterial cause, the deeper concealed because its origin is dynamic, and it cannot be destroyed but by dynamic power."[1]

If such obvious procedures as tying an artery for aneurism, dissecting out a sebaceous cyst, or amputating a cancerous breast, are thus condemned, what shall we think of such impious attempts to pry into the processes going on in the interior of our bodies —"as surely concealed from us as they are open to the sight of Omniscience"—as are involved in the diagnosis of consolidation of a lung, stenosis of a cardiac orifice, or tumor of the brain? And what of measures that disregard symptoms *in toto* and endeavor to attack the pathological process underlying them?

IV. The doctrine of "homœopathia" is inextricably bound up with the practice of infinitesimal dosage.

"The appropriation of a medicine to any given case of disease does not depend solely upon the circumstance of its being perfectly homœopathic, but also upon the minute quantity of the dose in which it is administered. If too strong a dose be given, it will infallibly injure the patient. The impression it makes is felt more sensibly because in virtue of its homœopathic character the remedy acts precisely on those parts of the organism which have already been most exposed to the attacks of the natural disease" (§ 275). "A strong dose of homœopathic medicine would do more harm than the dose of an allœopathic medicine of equal strength; for in that case the homœopathic aggravation—that is to say, the artificial malady excited by the remedy in the most suffering parts of the organism—is carried to a height that is injurious" (§ 276). This, of course, we should naturally imagine; that in so far as the effects of medicines do at all resemble the symptoms of diseases, the result of giving such medicines would be highly injurious. Instead of being taught by this the folly of his methods, Hahnemann, being, like Ephraim, wedded to his idols, takes refuge in a new absurdity, and concocts the doctrine of infinitesimals.

In order to determine just how far homœopathic medicines would have to be attenuated in order to be rid of their power for evil, Hahnemann had recourse to experience; and he found it necessary so to dilute the dose that it amounts to practically nothing. The well-known process is to dissolve two drops of medicine in ninety-eight of alcohol, one drop of this in ninety-nine more of alcohol, and so on until the necessary minuteness is attained, at from the tenth to the thirtieth dilution:[2] provided care be taken not to shake the containing vessels more than twice at each successive dilution, as otherwise too much "dynamic spirit" would be freed; and ten shakes might even make the medicine so powerful as to be extremely dangerous.

These directions and cautions are found in the *Organon*, beginning with Section 269, and elaborated in the succeeding twenty sections.

It is possible, however, for even the minutest dilution of homœopathic medicine to be too strong for a very sick patient. "In that case" we find[1] that "it will be sufficient to let him smell it once." In the process of smelling,[2] the patient should place a vial containing one globule of sugar the size of a mustard-seed, impregnated with a sufficiently attenuated dilution of the desired remedy, under one nostril, and take one momentary inhalation. If the dose is intended to be stronger, he may then repeat with the other nostril. The operation of the remedy continues as long as when the same drug is taken in substance, and hence the dose must not be repeated at shorter intervals. In Section 247, we are told that "the most subtile doses of the best chosen homœopathic medicines" are to be repeated at intervals of fourteen, twelve, eight, to seven days; except in acute cases, when the periods may be abridged to twenty-four, eight, or four hours, and in the most acute cases down to five minutes.

In a case of pneumonia, I suppose, the patient might safely smell the medicine once in four hours; in a case of mitral stenosis, once in a week;[3] and in a case of chronic gastric catarrh—not at all.

The citation of this nonsense is not unfair quibbling upon my part. It is the essential part of the true homœopathic practice. Any fair-minded person who reads what Hahnemann says upon this subject, his frequent strong, repeated affirmations that "the more homœopathic the medicine, the greater danger" if it be given in any but the most attenuated doses; his denunciations of the "pretended homœopathists" who give larger doses than he directs; his elaborate and minute directions as to the manner of preparation; forbidding powders, for example, to be triturated "with force"[4] for more than one out of the three hours which he considers necessary to effect liberation of the spiritual dynamic essence;—any fair-minded man, reading all this, cannot but admit that the doctrine of similars and the doctrine of infinitesimals must stand or fall together.

And that he is painfully in earnest as to the smelling business, is evidenced by the following statement

[1] Ed. cit., p. 33.

[2] Representing one grain of a medicinal substance dissolved in sufficient alcohol "to make one hundred and forty billions spherical masses extending from limit to limit of Neptune's orbit, or a quantity equal to many hundred spheres each with a radius extending from the earth to the nearest fixed star."—*Simpson.*

[1] Note to § 285. [2] Page 209.

[3] "Let the patient once strongly smell a globule as large as a mustard-seed impregnated with *hydrarg. met.* X., which is to be allowed to operate about nine days."—Page 208.

[4] Page 225.

—a statement which I certainly do not care to dispute: "All that is curable by homœopathy may with most certainty and safety be cured by this mode of receiving the medicine."[1]

Does it need comment of mine to show how utterly impossible it is for a physician to meet in consultation one who gives the slightest credence to the rot which I have quoted?[2] The physician's first course, as I have had the pleasure of observing in cases in which I have solicited aid from the special knowledge of my friend Dr. Jackson, is to make a diagnosis; the homœopathist is bound to reject diagnosis. The physician seeks out the causes of disease, that he may remove them, if possible; that he may intelligently combat their effects; that he may prevent disease in the future. The homœopathist is committed to the doctrine that disease consists only of symptoms whose cause has been concealed by an all-wise Providence. The physician may use or omit drugs; the homœopathist is bound to employ drugs, though, it is true, in such infinitesimal doses that if needless they will at least be harmless. But this negative virtue of the attenuated medication vanishes in cases in which drugs are imperatively needed, for then the homœopathist is precluded from employing them in effective quantity: because, if homœopathic, they will infallibly do harm; and, if not homœopathic, his system declares them to be murderous.

But it may be said that the homœopathist is no longer bound by the *Organon* of Hahnemann; he is open to the lessons of experience, and homœopathy is no longer to him an infallible law of nature, but an occasional guide in practice.

This brings us face to face with an exceedingly unpleasant portion of our task, that of considering our second hypothesis; namely, that men who now profess to be homœopathists are in reality something else. However, as we are merely considering it as a hypothetical, casuistical question, we may at least avoid direct personal reference.

Can one remove the foundation and expect the building to stand? Considering the origin of homœopathy, its claims to universal and infallible application, the explicit declaration of its founder that no other system could be true, even as more than one straight line could not be described between two given points; it must be much more than an occasional guide in practice, or it must be what scientific men regard it, a baseless fabric of assumptions. As has been well said by Prof. Gairdner, the vigorous imagination which can attribute nine hundred and thirty symptoms to charcoal, and ten hundred and ninety to oyster-shell, can find little difficulty in fitting a sufficient number of the confused mass of "provings" belonging to any drug, to any case in which recovery may have taken place coincidently with its use. Mere experience, then, need not take any out of the homœopathic ranks, if he be not possessed of a scientific conscience whose crying refuses to be quieted with sugar plums.

But a homœopathist cannot deliberately reject Hahnemann's *Organon* and remain entitled to the name. Hahnemann invented the name, or at least gave it its peculiar significance; Hahnemann has defined it, and no one has the right to alter Hahnemann's definition. He put forth homœopathy as a new system in medicine, differing *in toto* from all other systems, rejecting alike the methods of investigation and the methods of treatment pursued by the great body of physicians. As he formed it, so it must remain; for he claimed the authority of a divine revelation,[1] the infallibility of "an eternal and unerring law of nature."

If the barrenness of its history during the years that have been so fruitful for medical science; if the brilliant results of that patient search after material morbid agencies so derided by Hahnemann; if the triumphs of preventive medicine, in which a system founded upon drug-giving could have, and has had, no part; if the progress of physiological therapeutics, which having learned how remedies act, now joins forces with chemistry to attack the why:—if these things unite with continued experience in the sick-room, to prove the wretched inadequacy of Hahnemann's system; so that even in the temple builded to his name strange fires are burning upon the altar, so that even among his priests and votaries the light of the fires of science is breaking through and dispelling the gloom of his mystic and obscuring speculations:—if intelligent men, entering the homœopathic ranks through prejudice or force of associations, and in ignorance of the facts, have learned by study and experience the hollowness of the faith to which they profess allegiance—then there is for these men but one honorable course—the public acknowledgment of the facts. It may be unpleasant. It requires moral courage. But it is right, and it will compel respect.

But so long as a name having commercial value

[1] Note to Section 288, p. 226. It is a cheap method, too. He states that one globule will retain its virtues undiminished for twenty years, though it had been smelled during that period a thousand times. Let alienists tell us how much dependence can be placed upon the observation of a man who seriously makes such assertions.

[2] And I have by no means cited the most ridiculous passages of the *Organon*. I have said nothing of the "psoric miasm," for this is not essential to homœopathy; and, indeed, like the exceptions Hahnemann himself was compelled to make concerning "surgical diseases" and the "*causa occasionalis*," logically contradicts it.

[1] . . . "The certainty of medicine depends on the establishment of fundamental principles, based on natural laws, to guide the Healer in his Therapeutics; and . . . Samuel Hahnemann *was allowed to reveal to the world* such principles and their application for the cure of the sick, in his *Organon of the Healing Art* . . ." Declaration of Homœopathic Principles, loc. cit.

as a trademark is retained by any body of men, so long do the barest principles of trade-honor bind them to all the implications of that name. If they can reconcile it with their consciences to continue to bear a name to which they have lost the right, we at least dare not impute to them, without sufficient evidence, conduct so base and cowardly; or, if we have such evidence, then we must not, by condoning duplicity, become partakers in dishonor.

CLINICAL MEMORANDA.

HYGIENIC.

Possibility of Establishing Tolerance for the Tubercle Bacillus.—During the last summer I spent much time in bacteriological laboratories abroad, studying the different methods of manipulation and technique. The first culture given me to stain by Prof. Klein, at the College of State Medicine, London, contained tubercle bacilli. The tube had been kept in an incubator used by all the students in the College, not only for legitimate purposes, but for warming of staining materials, and, therefore, it goes without saying, that the temperature was not at all constant. The first slides prepared from this culture showed club-shaped bacilli. Suspecting a lower degree of virulent life, I permitted the tube to remain at the temperature of the room for several days, before staining a second series of slides. Upon these I found many bacilli in the forms represented in the accompanying cut.

When Prof. Klein's attention was called to the newly discovered forms of bacilli, he expressed much surprise, and was unable to account for the change in their forms, and yet was quite certain that the tube in question was inoculated with bovine tubercle bacilli after the method generally employed. From this tube I made a series of tube inoculations, and grew bacilli which in every respect corresponded to the ordinary tubercle bacillus. From the facts already given, I have seen fit to institute a series of experiments, the results of which will be published from time to time, and which lead to the following thoughts.

In considering a means for overcoming infection by tuberculosis it is probable that a condition of tolerance to the action of the tubercular bacillus must first be established. To this end two hypotheses may be suggested:

First. It is possible that, by a thorough filtering out of bacilli from tubercular material, a filtrate might be obtained and attenuated so that by systematic inoculations a change might be produced in living animal tissues that would enable them to resist virulent tubercle bacilli.

Second. To bring about a chemical or physical change in living tissues that would resist tubercular phthisis, it is possible that inoculations with the bacillus would have to be made; yet, before this could be done, the power of the virulent bacilli would have to be diminished, otherwise the result would be most disastrous.

The accompanying cut represents tubercle bacilli in other forms than those heretofore recognized, and it is possible that they represent the condition of bacilli necessary to prove the truth of the second hypothesis, particularly as animals inoculated with these organisms have survived subsequent inoculations with virulent tubercle bacilli.

Samuel G. Dixon, M.D.,
Professor of Hygiene, University of Penna.

MEDICAL PROGRESS.

Death from Chloroform.—Another case of death during the administration of chloroform is reported in the *British Medical Journal* of October 5, 1889. A lady, about twenty-five years of age, of a very nervous, excitable temperament, desired to have some teeth extracted, and insisted upon an anæsthetic. Her medical attendant administered chloroform. The patient was seated in an easy chair, and, after inhaling a few breaths of chloroform, she slipped down in the chair, and her pulse and breathing were both found to have stopped. Artificial respiration was at once resorted to, but without success. It seemed perfectly clear that the patient was not anæsthetized when she died, as she had only just commenced to inhale the chloroform, and, of course, no attempt had been made to extract her teeth. The coroner's jury returned a verdict that death was due to syncope, and that no blame whatever was to be attached to the administrator.

Syncope, as has long been known, will result from any very violent emotion, and especially from the effects of fear. In a case recorded in Germany a few years back, a female patient visited a dentist, and requested him to extract some carious teeth, demanding, at the same time, that she should be chloroformed. The dentist, very properly, explained the risks of chloroform, and suggested nitrous oxide; but his patient persisted, and he consented to humor her. Having, however, a wholesome dread of chloroform, he substituted eau-de-cologne, and bade her inhale the supposed anæsthetic from a folded towel. After two or three inspirations she suddenly fell from the chair, and died. That death occurs from fear in some cases during the earliest stage of chloroforming is unquestionable; and as it is predisposed to by the sitting posture, and by forcibly restraining the patient's voluntary movements, there can be very little doubt that in every case in which chloroform is to be administered the recumbent posture should be insisted upon, and a loose dressing-gown substituted for the usual every-day costume. There is another point of no small importance, which is, that chloroform increases the liability to death from "reflex syncope." A person partly under chloroform is more prone to die from fright than one to whom chloroform has not been administered. Nor must it be forgotten that deaths occur when only one or two inspirations of chloroform have been taken; this is liable to take place when a too-concentrated vapor (that is, one of greater strength than four per cent.) is employed. In the event of syncope occurring in one of the ways above indicated, the line of treatment which offers the greatest chance of success is

total inversion of the patient, while care is taken that the rima glottidis is maintained open for the entrance of air. Dr. Chisolm, who has strongly supported this, Nélaton's original manœuvre, has recorded some highly instructive cases in which the method of inversion, being promptly performed, effected resuscitation, and so saved the patient's life. But here a caution must be given. Nélaton's method is valuable only in primary syncope, and is absolutely dangerous in cases of heart failure consecutive upon pulmonary engorgement and overfilling of the right heart; or, in short, when respiration stops before the heart ceases to beat. Cases belonging to this last category do not occur, as a rule, until the later stages of chloroformization, and the respiratory failure is then due to overdosage with the anæsthetic.

Functions of the Stomach in Phthisis.—Simultaneously with the recent investigations regarding the prophylaxis of phthisis, the accompanying symptoms and various forms of this disease have been most actively discussed, both here and abroad. Of these, phthisical dyspepsia is perhaps the most common and most unpleasant symptom. German investigators have dealt with the subject most extensively.

DR. G. KLEMPERER,[1] after an examination of a large number of cases, places them in two categories—initial and terminal dyspepsias. The initial dyspepsia is characterized by heart-burn, eructations, nausea, a feeling of fulness of the stomach, and not infrequently vomiting, which is usually excited by violent coughing, and is independent of the ingestion of food. The appetite is variable, and varies from rejection of food to insatiable hunger. Klemperer believes dyspepsia to be frequently the first symptom of early phthisis. Terminal dyspepsia is characterized by constant loss of appetite; severe vomiting usually occurring every day or two, and the stomach frequently becoming greatly distended. Primarily, the trouble is merely a weakness of the muscles, but finally there is almost total cessation of the secretions.

Therapeutically, Klemperer especially recommends remedies which tend to stimulate the motor power of the organ. Foremost among such drugs is creasote, and he has found that alcohol and bitter tonics are also valuable.

Another writer on this same subject, DR. O. BRIEGER, of Breslau,[2] has examined sixty-four phthisical patients in various stages of the disease with the following results: In severe phthisis only 16 per cent. of the cases had a normal condition of the stomach, in the rest a more or less complete gastric insufficiency was noted. In 9.6 per cent. an entire loss of the normal secretive power was observable. In cases where the disease was moderately severe 33 per cent. were found to be free from gastric complications, and in 6.6 per cent. an entire absence of the normal secretions was observed.

Brieger lays great stress upon the value of "overfeeding," or increased alimentation, if the stomach will permit it.

DR. C. HILDEBRAND,[3] in examining the gastric secretions of forty cases of phthisis, found free muriatic acid in some patients, while in others it was absent. He further noted that in the former fever was absent, whilst in the latter it was constant. In a third group of cases, in which the fever was intermittent, it was found that the presence and quantity of hydrochloric acid depended largely upon the condition of the temperature. Hildebrand, as well as Brieger, has obtained excellent results with forced alimentation.

[1] Berliner klin. Wochenschrift, No. 13, 1889.
[2] Deutsche med. Wochenschrift, No. 14, 1889.
[3] Centralblatt für klin. Med., September 21, 1889.

Laparotomy for Hydatid of the Liver.—DR. DAVIES THOMAS, in a paper on echinococcus cysts (*The British Medical Journal*, September 28, 1889), says that it is not possible to estimate the value of tapping, parasiticide injections, and electrolysis, because the cure which often appears to follow is frequently illusory. He sees reason to believe that tapping operations fail to cure in fully 40 per cent., and probably in a larger proportion. Taking aspiratory punctures and ordinary tapping operations together, the deaths amounted to nearly 18 per cent.; but the mortality following aspiratory puncture, whether single or multiple, was only about half that of punctures with an ordinary fine trocar. Dr. Thomas believes that the greater the number of punctures required the smaller the probability of cure, and points out that, though simple puncture is generally devoid of risk, it has been known to cause sudden death, sometimes apparently from shock—sometimes, however, in the case of pulmonary hydatids, from suffocation by the fluid contents of the bladder-worm. The objection to puncture as the mode of treatment for internal hydatids, however, lies less in the occasional perils of the operation than in its frequent inefficacy.

Dr. Thomas considers that nothing can be said in favor of parasiticide injections into the sac and the employment of electrolysis that does not apply with equal force to simple puncture; and, moreover, each possesses drawbacks of its own. The statistics of abdominal section for hydatid of the liver compiled by Dr. Thomas are extraordinarily good. He has collected sixty-eight cases thus treated, with only seven deaths; in one of these seven cases the patient died suddenly during the operation from sudden arrest of the heart due to a hydatid cyst in it; in two others there were multiple hydatids in the body. Even including these three cases, the recoveries amounted to within a fraction of 90 per cent. The method by two stages, producing peritoneal adhesion by incision and packing with carbolized gauze (Volkmann's method) showed a mortality of a fraction over 19 per cent.; the operation by caustics gave a mortality of 33.68 per cent., while that by the *canule à demeure* was 26.66. The cases treated by Volkmann's method only numbered twenty-one, but even so the statistical evidence appears to be strongly in favor of abdominal section as the safer procedure. Where unruptured cysts are present on the convexity of the liver, the treatment offers greater difficulty, for Dr. Thomas states that thoracic incisions show a high rate of mortality. As to pulmonary hydatids, however, the risks and disadvantages of puncture are so great and the results of radical operations on the whole so favorable, that Dr. Thomas considers that there ought to be but little difficulty in making a choice of treatment in ordinary cases. Where a hydatid, whether of the liver or of the lung, has ruptured in the pleura, free incision into the pleura appears to be the only treatment which holds out a fair promise of success.

Medical Treatment of Ileus.—Among European investigators none, perhaps, have so carefully studied the therapeusis of ileus as Dr. Nothnagel. After an experience of many years he now bases the medical treatment of this disease on the following principles: Excitation of peristalsis by means of irrigation, and salt water enemata or ice-water injections, opium internally to guard against fatal collapse, entire abstinence from all food, and exclusion of all cathartics. Irrigation of the stomach, although practised by many, is of no particular value; still, as it is harmless, it may be tried, and may give the patient some ease. Massage is emphatically contraindicated, as is also the use of electricity.

When given early in the disease Nothnagel favors the use of mercury. His experiments upon animals have proven the fact that the drug never causes reversed peristalsis, either in the normal bowel or when stenosis exists.

He asserts that the vomiting of fecal matter is caused mechanically. When an effort is made to vomit, the abdominal muscles are forcibly contracted, and the fecal mass, being compressed, seeks the easiest outlet, which is above.

A Novel Vermifuge.—While the following advice seems to us as apt to kill the host as the guest, we quote it for the benefit of our readers from the *Journal of Pharmacy* for September:

A whole cocoanut, grated fine, mixed with milk, and taken on an empty stomach on rising, is fully as reliable a tæniafuge as male fern, kousso, or pomegranate, etc.; it is far more agreeable to the taste. No after-treatment is necessary, as a single dose usually is all-sufficient.

A New Turpentine Eruption,—Dr. Ernst Feiber, of Aix-la-Chapelle, in the *British Journal of Dermatology*, furnishes an excellent clinical example of the very rare and unique condition of an œdematous and papular erythema following the internal administration of a turpentine preparation. The patient was under treatment for subacute gonorrhœa, and was taking ten minims of the oil of turpentine twice daily. On the ninth day of the treatment—that is, after the use of nearly three fluid-drachms of the turpentine preparation—the patient complained of severe pruritus. On the following day an erythema, consisting of small, acutely pointed papules of a bright red color, some of which were excoriated by scratching, was found to cover the entire surface of the body excepting the head and face, being more pronounced on the lower than on the upper limbs, and specially intensified on the abdomen and buttocks. The pruritus and rash disappeared in three days, on the cessation of the turpentine preparation. Being desirous of ascertaining if the turpentine would again produce the erythema, Dr. Feiber again prescribed it. On the fourth day violent itching returned, accompanied by an eruption of similar papules; but in addition to these there were noticed on the abdomen and buttocks small red, slightly raised spots, with patches about the size of a florin of the same bright red color, both in their centres and in their peripheries. The urine was normal, and the patient felt well. Dr. Feiber remarks that whereas the first eruption was exclusively a pure papular erythema—roseola, the second, on the contrary, was a mixed form of œdematous and papular erythema, an eruption described now, as far as he knows, for the first time as consequent on the administration of turpentine.—*The Practitioner*, September, 1889.

Quiet Gout.—This term, says Mr. Jonathan Hutchinson, in the *Archives of Surgery*, may be suitably employed as applicable to the many cases in which those who are gouty experience no material inconvenience. The phenomena by which this condition is recognized are infinitely varied, and some of them very peculiar. A great many of them are probably caused by locally restricted attacks of peripheral neuritis. He regards the following as a case in point: A gentleman, past middle age, who had never suffered from an attack of gout, but who for many years had experienced many warnings, became the subject of a very real but almost ludicrous affection of one knee. He could walk quite well, could bear to have the knee handled any way, and there was not the slightest swelling. There was one thing, and only one, which he could not do without pain: he could not kneel on any soft substance. If he took care how the knee was placed on a hard floor, he could bear the pressure without pain for some time, but to kneel on a cushion might produce an explosion of pain which would make him cry out. He was often, so to speak, "caught" when in the act of getting into bed. The pain was of the nature of a local explosion, and was limited to an area the size of a crown piece. Very curiously, after one explosion had occurred it was difficult to produce a second which should in the least approach it in severity, and, after two or three shocks, he could kneel firmly without any pain whatever. The liability to the attacks passed away under treatment by alkalies and restricted diet, but subsequently returned and lasted a month or two. The skin on the front of the knee became for a time decidedly anæsthetic, a point which seemed to confirm the view that there was a local peripheral neuritis. —*The Practitioner*, September, 1889.

Hydrochlorate of Hyoscin as a Sedative.—Dr. Magnan, of Paris, who has lately tested hydrochlorate of hyoscin in his hospital, finds that a dose of 1 milligramme ($\frac{1}{64}$ grain) renders the patient calm in five minutes; he appears as if slightly intoxicated by alcohol, his feet seem rooted to the ground and he ceases talking. The drug is valuable in the treatment of insanity, as under its influence lunatics become calm, and remain so. In delirium tremens it induces healthy sleep. A child of thirteen suffering from tic, under its influence was cured of the spasmodic movements. A hysterical patient suffering from profuse perspiration of the hands and arms was entirely relieved by means of an injection of ½ milligramme, the perspiration was arrested in two minutes. —*The British Medical Journal*, September 28, 1889.

Treatment of Eczema, Psoriasis, and Pityriasis.—At the International Congress of Dermatology and Syphilography, Dr. Gourbault reported a number of cases of eczema, psoriasis, and pityriasis, which he had rapidly cured by the following syrup and ointment: Sixteen ounces of the syrup contain—of bicarbonate and acetate of soda two drachms each, also two drachms of extract of gentian, and a similar quantity of extract of sarsaparilla; a small amount of rhubarb and senna may be

added at the physician's discretion. The dose should be two fluidounces daily.

The formula for the ointment is as follows:

℞.—Ergotine, Perchloride of iron } . . . āā ʒss.
Vaseline . . . . . ℥j.
M. et fiat unguent.

This should be applied to the affected parts twice a day.

Antipyrin.—One of the greatest dangers which threatens the life of a new drug is the probability of its being looked upon as a panacea. Then, as a rule, after a brief period of notoriety, the drug fades away into obscurity, and even those good qualities which it does possess are looked upon with suspicion. No drug of late years, perhaps, has been so wronged in this way as antipyrin; and when one reads that in New York and elsewhere "antipyrin tippling" has become a common custom, the welfare of the drug seems indeed precarious. Yet antipyrin has held its own so far, and its sphere of usefulness seems to be broadening. The latest investigations with the drug have been probably those of DR. S. CARAVIAS, conducted under the guidance of Professor Germain Sée. He sums up the various actions of the drug in the *Centralblatt für klinische Medizin* for September 28, 1889.

Antipyrin decreases the excitability of the sensitive nerve-centres. Administered cutaneously it greatly alleviates pain of various origins. By means of a direct influence upon the vaso-motor system, it causes an enlargement of the peripheral vessels. Antipyrin in a 50 per cent. solution is a most excellent antiseptic, superior even to a 1 to 1000 solution of sublimate.

Clinical experiments have shown that antipyrin is a most excellent anodyne. It has yielded most satisfactory results in acute articular rheumatism, neuralgias, lancinating pains, etc., and its use, except in a few exceptional cases, has been unattended by any unpleasant accompanying symptoms. Good results were also observed to follow its use in gonorrhœal rheumatism, in dyspeptic troubles, and also in asthma.

The dose employed by Caravias ranged from 47 to 93 grains. In case the internal use of the drug is not tolerated by the stomach, it should be given hypodermatically. This form of administration is also preferable when a quick action is desired.

Regarding the antiseptic properties of antipyrin, Caravias has used a 10 per cent. solution as an injection, and medicated bougies containing twelve grains of the drug with great success in gonorrhœa.

The Treatment of Angioma by Electrolysis.—In the *Centralblatt für Chirurgie* for September 7th, DR. TH. GESSLER gives a report of 221 cases of angioma occurring in the Tübingen clinic. Speaking of the various methods of treatment employed, Gessler records 60 cases treated by excision; 73 by ignipuncture, and the remainder either by the galvano-cautery, ligation of their nourishing arteries, or injection of chloride of iron solution. In 10 of the most severe cases electrolysis was resorted to, and in 9 of these it proved to be successful.

Electrolysis has been rarely used in Germany, but widely employed in England and America. In France its employment has been limited.

The method of treatment employed at the Tübingen clinic was as follows: Two platinum needles were thrust into the base of the angioma, care being taken that they did not touch each other; then a constant current, of about ten to twenty milliampères, was allowed to pass through the growth for ten or fifteen minutes. A burn was caused which healed quickly when treated with iodoform. The procedure must be repeated frequently during a period of one or two months before a complete cure can be effected.

The Cause of Death from Burns.—A series of experiments recently conducted by DR. WELTI, are reported in the *Centralblatt für klinische Medicin* for September 21, 1889. The research was undertaken with a view of ascertaining the cause of death so frequently observed to follow superficial burns of a comparatively slight nature. From an etiological point of view Welti's researches are most interesting.

The first experiments consisted of holding a rabbit's ears in water, the temperature of which was gradually increased up to about 160° to 170° F. The animals all died within an hour. In the other experiments the animals' ears were merely dipped once into water of about 160° F. The majority of these died in one or two days.

In each case the cause of death was manifestly identical, as the same changes were observable in every instance. This change consisted in a degeneration of the red blood-corpuscles, and the formation of thrombi loaded with blood plaques in many vessels, especially those of the pia mater, kidneys, and intestinal tract. When the animals lived for several days after the experiments, pathological results of the above changes were noted. Owing to the obstructions, the different tissues underwent softening and the free surfaces of mucous membranes broke down. Observations in the human subject, under similar circumstances, revealed identical pathological changes.

"Amminol" for the Disinfection of Sewage.—In the issue of THE NEWS for September 14th, a new method of precipitating sewage, then being tested at Wimbledon, was referred to. The *London Times* now devotes a large amount of space to the consideration of this new disinfectant method, which was discovered by MR. WOLLHEIM, of London, and which bids fair to revolutionize the sewage question. The disinfecting power of amminol gas is such that, when introduced into sewage, it very quickly destroys the microbes of putrefaction and of many diseases. The odor of sewage is almost instantly displaced by that of the reagent, and in less than an hour the sewage thus treated is both deodorized and sterilized. It is reported that Dr. Klein has in part confirmed the claims of the discoverer in so far that one sample of sewage examined by him was found to be absolutely sterile after having been treated by the amminol method. If this alleged discovery should be verified, it will undoubtedly become one of the most useful discoveries of the present day and must materially influence the future of sanitary practice.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to The Medical News will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 Sansom Street,
Philadelphia.

SATURDAY, OCTOBER 19, 1889.

ANÆMIA AND ITS TREATMENT.

The interesting papers recently read by Dr. Henry as referee and Dr. Forchheimer as co-referee, before the Association of American Physicians, which have appeared in the columns of this journal within the last few weeks, naturally call attention to the question of the treatment of the maladies which they so fully discuss. Let us first glance at the theories held by some of the various writers on this subject, before turning to the drugs actually to be employed; and in doing this, we must of necessity study to a slight extent the failure of the absorption of iron under ordinary circumstances.

We have the theory of Bunge that sulphur in excess in the body prevents the assimilation of iron, and its endorsement by Clark. If the latter is quoted correctly, his own statement contradicts itself, for he says that in chlorosis sulphides are formed in excess, and this causes chlorosis by non-assimilation of iron. The question at once arises, How did the chlorosis come on in the first place, before the sulphides were formed? Sulphides may aid in its continuance, but it is not proved that they produce it, and it is proved that they are often present in enormous quantities where no chlorosis occurs. Again, we have no proof that the manufacture of hæmoglobin depends upon the absorption of iron alone.

Clark thinks that when we give iron to such a case the sulphides unite with it and the iron in the food escapes into the blood-making organs. Either the doses of iron must be very accurately fitted to the amount of sulphides, or excessive amounts must be used, so that no sulphide may be companionless. As all persons have sulphides present in sufficient amount to make a characteristic stool on taking iron, we should, according to this theory, all have anæmia unless we protected the iron in our food by a constant use of the free metal.

We think practical experience does not support the use of enormous doses of iron in anæmia and chlorosis, but rather the contrary. The celebrated teachers of the Dublin school years ago put forward the theory that small doses of iron were more useful than large ones in direct ratio to the severity of the disease, and we are much inclined to agree with them. There is quite as much likelihood of failure of assimilation of iron by diseased organs as of its destruction by wolf-like sulphides.

We learn from practical experience several things which science does not tell us, namely: Iron will not cure all cases of chlorosis or anæmia, even if they belong to a functional type, but other methods must be resorted to at the same time, or separately, for their cure. The insoluble salts of iron are better remedies for absorption than the soluble salts, because they are not precipitated in the stomach, and for this reason reduced iron is the best chalybeate for uncomplicated cases. Beside using iron in this form, we should employ laxatives if the bowels are confined, mineral acids, particularly nitric and nitro-muriatic, for their effect on the function of the small intestine and liver, and, in addition, bitter tonics of a more or less simple form, according to the exigencies of the case; using quinine if malaria seems lurking in the body, simple bitters if the stomach lacks in tone, aromatic bitters if, from atony of the muscular coats, the digestive tract seems sluggish, with a resulting formation and accumulation of flatus and digestive juices.

At present we may conclude that pathology has not found out the real causes of these troublesome cases, and that until physiology can put its finger upon the most intricate mechanism of blood-making with a positive, clear statement of its function and the physiological chemistry of the manufacturing of hæmoglobin, we must remain satisfied to resort to the remedies which experience or common sense tells us will be of value to our patients.

HOMŒOPATHIC VIEW OF MODERN HOMŒOPATHY.

THOSE not members of the medical profession, often assert that regular physicians are exceedingly bigoted because so many of them exhibit great feeling when the question of homœopathy is brought forward for discussion. The reason for the bitterness of many medical practitioners is, however, not far to seek. It is because their experience has taught them, that the bulk of the homœopathic practitioners owe, in great part, their success to their not practising what they preach, to their claiming that they avoid strong medicines while at the same time they use drugs in much the same manner as do other doctors.

A recent editorial in *The Journal of Homœopathics* seems worthy of being regarded as witnessing the decadence of modern homœopathy from Hahnemannism. We notice also in the same journal the query whether the American Institute of Homœopathy, having a guilty conscience, was afraid of Judge Barrett's arraignment. It seems to us odd that any legal decision should have been necessary to prove that a man who habitually does exactly what he professes most strenuously not to do is a fraud and a hypocrite, but there are many in whom the discovery, and not the crime itself, produces remorse. The editorial is as follows:

"Perhaps no stronger comparison can be presented between the methods of Hahnemannian Homœopaths and the Eclectic Homœopaths than the recommendation of President Talcott, of the American Institute of Homœopathy, in his annual address at Minnetonka Beach, and the action of the International Hahnemannian Association in 1886, in relation to the same subject, viz., specialties in medicine.

"Specialism in treatment presupposes that there are different means of producing diseased conditions than that which Hahnemann has presented—*i. e.*, something different than a 'distunement of the spirit-like Dynamis (life-force), in the invisible interior, vivifying our bodies. If this supposition is true, then there is no ground for the Institute to stand upon, as an organization separate from the allopathic school; if it is untrue, then the very suggestion places the Institute in the doubly false position as a supporter of homœopathic principles and an opponent of homœopathic practice.

"There is absolutely no place for specialists in homœopathic treatment, except the specialism of *similia*. If there is sickness presenting itself by symptoms in one particular organ or set of organs, it is not because those organs alone are sick, but because the entire individual is sick, and the cure must be effected throughout the entire individual; otherwise there is no *cure*.

"If the American Institute will take pains to study Homœopathy and Hahnemann's *Organon* for the ensuing year, there will be some hope that such absurd blunders will cease in the near future. Such matter, as this we criticise, is, however, but a mere caricature of homœopathy.

"It is only in the International Hahnemannian Association that homœopathy pure and simple is to be found—the Institute abandoned it long ago."

THORACENTESIS.

THE subject of the treatment of collections of fluid in the chest must always be of interest to the practitioner of medicine, because diseases giving rise to such effusions are so constantly met with that every physician must frequently be called upon to treat them.

In *Lyon Médical*, September 8, 1889, Leclerc and Tillier record a case of death from exhaustion following empyema, where thoracentesis had been practised with irrigation of the pleural cavity. One of the chief points of interest in the case is that the injection of a warm antiseptic solution gave rise to the most alarming symptoms, absolute instantaneous arrest of heart action and respiration, with a brachial monoplegia which remained after the more threatening symptoms had been successfully combated. That the symptoms were not due to the antiseptics used is evident from the fact that they appeared immediately, before sufficient time had elapsed for absorption. This case and others illustrate the danger attendant upon irrigation of the pleural cavities, and that such danger should exist is not to be wondered at when we consider the important structures contained in the very mobile mediastinum. That the practice of washing out the emptied pleural cavity is unnecessary, the statistics of Bowditch demonstrate very clearly.

Thoracentesis by itself is not without risk fortunately minimized by the substitution of aspiration for tapping with trocar and canula. Foremost among the dangers stands "albuminoid expectoration," or, to name the lesion instead of the symptom, the overfilling of the capillaries of the lung,

rapidly expanding to occupy the vacuum produced by withdrawal of the exudate. Beside this there is the risk of pulmonary embolism, as well as that of producing convulsive or paralytic phenomena which are usually transitory, but which may, as in the case above mentioned, persist for a longer time.

That there are dangers incident to the operation of thoracentesis is a reason not for discontinuing its use, but for extreme care in its performance. That it should not be unnecessarily performed is as certain as that it often is the means of saving life.

Past experience has taught valuable lessons in regard to the handling of pleuritic effusions. That the fluid when serous can often be speedily removed by medicaments, notably by the use of the "dry method," is undoubted. The withdrawal of even a small portion of the mass of fluid may wonderfully accelerate the complete absorption of all of the exudate. Should the amount of fluid be so large as to threaten life, or should its absorption be found (after a proper trial of non-operative measures) to be slow or imperceptible, the operation of thoracentesis by means of a *small* aspirating needle is indicated to remove either a part or all of the liquid.

Quite different is the aspect of the case when hectic appears, or when exploration with a hypodermatic needle reveals the presence of pus. Here the only means of cure is to evacuate the pus either by aspiration, or far preferably by incision and drainage with or without exsection of portions of one or more ribs. These cases run a far better course if no injections whatever are made, and we believe in the large majority of instances the use of such washes distinctly increases the danger of a fatal issue.

REVIEWS.

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., F.R.C.P. New (fifth) American from the seventh English edition; edited, with additions, by Robert P. Harris, M.D. Octavo, 670 pages. Philadelphia: Lea Brothers & Co., 1889.

After the lapse of four years a new edition of this well-known work appears, sufficiently Americanized upon the points where English and American obstetricians differ in opinion and practice, to fit it for the uses of medical students and obstetricians in this country. We find some portions of the book rewritten and several new illustrations added, but by far the greatest change is seen in the additions and notes of Dr. Harris. The pages devoted to the anatomy and physiology of the organs concerned in parturition are practically identical with those of the earlier editions. The precise mode in which the blood escapes from the vessels in producing the menstrual discharge, has been studied by Leopold upon a young girl burned to death on the third day of her menstrual period, and his observations corroborate the view of Coste—namely, that the blood transudes through the coats of the capillaries by a process of diapedesis, while the same observation rather disproves the theory that the entire mucous membrane, or even any portion of it, undergoes the fatty degeneration and extensive exfoliation as are so commonly described. Part II., in which pregnancy is considered, will give the student a clear and concise idea of conception and generation. The author is to be congratulated upon his clear elucidation of the chapter devoted to embryology, a subject which is always so obscure to the average reader. While allusion is made to the employment of abdominal palpation and the fact that it has not been generally appreciated in obstetric works, the author, we think, has not given the subject as much attention as its importance merits. An illustration and less than a page of text describe the method. There is, however, no mention of its value in diagnosticating occipito-posterior presentations, nor the possibility of ascertaining the approximate size and compressibility of the fœtal head. Dr. Herbert R. Spencer, at a recent meeting of the London Obstetrical Society, pointed out the possibility of making the diagnosis of placenta prævia by this method.

In discussing the treatment of extra-uterine pregnancy, prior to rupture, the author states that the uncertainty of diagnosis has prevented the adoption of abdominal section and, so far as electricity is concerned, says, "this practice is perfectly safe and there can be no rational objection to its being tried."

The American editor's note clearly indicates the necessity of employing the exsection method in dealing with the cyst and placenta in cases where the fœtus is living and viable.

About two hundred pages are devoted to labor, in which are ably discussed the phenomena and management of labor, the mechanism and management of normal and faulty presentations, anæsthesia, and dystocia.

The author approves of the intra-uterine applications of styptics as a *dernier ressort* in treating post-partum hemorrhage, but makes no mention of the intra-uterine tampon of iodoform gauze, as first recommended by Dührssen.

In considering obstetric surgery as applied to many causes of dystocia, Dr. Harris, in his editorial notes, has displayed again his intimate knowledge of what has been accomplished by the obstetric surgeon—a knowledge, indeed, so accurate and far-reaching as to merit the highest praise.

It is most gratifying to learn that the Porro operation has fallen in its rate of mortality since 1884 from 58 to less than 20 per cent.; that laparo-elytrotomy has given way to the conservative, or improved Cæsarean, by reason of its diminished death-rate from 45 per cent. to a general average of 20 per cent., and for Continental Europe of 12 per cent.

The chapters describing obstetric operations are admirable, particularly that on Cæsarean section.

The work concludes with ten chapters on the puerperal state, the last one on pelvic cellulitis and pelvic peritonitis, in which the author refers to the importance

of distinguishing the two classes of cases—an importance which recent abdominal work has failed to recognize.

Playfair's Midwifery has for a long time enjoyed a well-deserved place of honor among the standard works on obstetrics, and we see no reason why it should not continue to be one of the best books for the student or practitioner.

Wood's Medical and Surgical Monographs. Volume I. Number 1. Octavo, pp. 258. New York: William Wood & Co., January, 1889.

The first volume of this series of monographs opens most appropriately with the well-known lectures of Mr. Jonathan Hutchinson, delivered in 1881, on The Pedigree of Disease, which it would be supererogation on our part to review and which are above criticism. A more fitting introductory essay to a series could not well have been selected. Following these six lectures on Temperament, Idiosyncrasy, and Diathesis, are eight on Common Diseases of the Skin, by Dr. Simon, of Birmingham. In them, pruritus as a symptom, eczema, psoriasis, scabies, acne, and ringworm are ably discussed from the standpoint of the general practitioner, with much more attention to treatment than to pathology and dermatological nomenclature. Dr. Simon, in most of these diseases, rightly considers the general management of paramount importance, and devotes six pages to the constitutional treatment of eczema, adding one more protest against the indiscriminate use of arsenic in all but the most chronic cases.

Last and least in practical value are fourteen lectures of Dr. Ferrand's on The Varieties and Treatment of Bronchitis. Classification seems chiefly to have occupied this author, describing, as he does, congestive bronchitis, catarrhal bronchitis, inflammatory bronchitis, spasmodic bronchitis and infectious bronchitis, with nearly fifteen sub-varieties. On the whole, these lectures, though interesting, must often be puzzling to those accustomed to broader views and less minute classification. In treatment there is but little originality, revulsives, inhalations, and nauseant depressants all being advised. Nauseants Dr. Ferrand uses very largely, even when free secretion is established. The volume is printed on the best of paper and in the clearest type.

A Guide to Therapeutics and Materia Medica. By Robert Farquharson, M.P., M.D., etc. Fourth American from the fourth English edition. Octavo, pp. 598. Philadelphia: Lea Brothers & Co., 1889.

The existence of the classical works of Wood, Ringer, and Bartholow makes the addition of smaller and less complete works appear to us unnecessary. Dr. Farquharson has given us a book fairly up to date in regard to our knowledge of drugs and their effects, but to that knowledge he has added not an iota. The work before us partakes both of the nature of a quiz-compend and a text-book. Used as the former it would be better for the student than the average compend, which, in the present state of medical education, is perhaps a necessity. The manner of placing the physiological actions and therapeutic uses of drugs in adjacent columns, and the frequent bracketed annotations of the editor seem to us an unfortunate arrangement, and, until one is accustomed to it, decidedly distracting. The most useful sections are the introductory chapters on general rules for prescribing and the appendix containing the formulary issued by the American Pharmaceutical Association. From the latter the practitioner may glean many suggestions valuable in writing his prescriptions.

Dr. Woodbury has done his work well and thoroughly, and in no instance will the American reader be led astray by English authorship.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, September 11, 1889.

The President, W. W. Keen, M.D., in the Chair.

Dr. Ferdinand H. Gross read a paper on

HÆMATOMETRA.

The rarity of hæmatometra is so well known that, while I have nothing new to say on the subject, I have been induced to report to the Society in some detail two cases of this character, which came under my observation during the early months of the current year. Atresia of the vagina I have, of course, frequently observed, but not when it was complicated by the state of which I now speak.

In the cases to which allusion has just been made, the atresia existed in one, at the lower end of the vagina, while, in the other, it consisted in an obliteration of the cervical canal of the uterus; and thus two interesting varieties of the occlusion were exemplified.

A young girl who had been under the care of different physicians without the source of her troubles being fully recognized, was referred to me by a medical friend for treatment, with the information that a tumor occupied the vagina and filled up the lower part of the pelvis.

The patient was in her fourteenth year, and therefore at the age of puberty; but she had never menstruated—that is to say, no visible sign of the catamenial flow had been noticed. The first disturbances of her health had occurred about six months before, and although she never felt quite well afterward, her indisposition, for a time, caused no apprehension. Finally, a number of paroxysms of great severity attracted attention, and the alarming character of the exacerbations led to a physician being consulted.

When, in an advanced stage, the case was referred to me, a digital examination of the vulva revealed protruding therefrom a smooth and very tense swelling, in which the experienced touch could readily detect fluctuation, particularly by rectal exploration. Neither the examining finger nor the probe could find anywhere between this protrusion and the labia an entrance into the vagina. The hypogastrium had become prominent from a tumefaction which arose from the pelvis. This enlargement in the course of its development had been noticed to be most sensitive during the above-mentioned paroxysmal attacks, which were doubtless the regular menstrual molimina. The continuous abnormal pressure upon the pelvic organs was the occasion of vesical

and rectal tenesmus as well as constipation; and restless nights were the inseparable accompaniments of such torments. Aside from these there were symptoms of a subjective character, such as headache, giddiness, nausea and other gastric distress, a feeling of painful fulness in the abdomen, palpitation, and disturbed vision which the prescribed glasses of the oculist had failed to relieve. The presence of such distressing and long-enduring symptoms naturally led to the diagnosis of hæmatometra as a consequence upon atresia hymenalis.

It is not my purpose here to recount with exhaustive minuteness the various results of hæmatometra if relief be not given in good time, by what is usually a simple surgical operation, nor would the time allotted permit me to speak of the lesion as it occurs in double vagina, in duplex uterus, and in other malformations of the female generative organs. Greulich relates in concise form, but with sufficient clearness, the different issues of this condition, and cites an array of authors who appear in the literature of the subject. Some of the results of these blood-tumors should not remain unnoticed in this place. Much may depend upon the period of life at which the atresia has been acquired. For example, in the climacteric age the hæmatometra may eventually be tolerated (*Real Encyclopædie der gesammten Heilkunde*, vol. vi. page 180), or at least borne with less suffering or discomfort, since at this period of change the tumor may cease to enlarge because of the discontinuance of the menstrual secretion. Again, at periods prior to the menopause, the rapidity or slowness with which the liquid accumulation takes place, and consequently the degree of its evil effects upon the general organism, may depend upon the character of the patient's constitution, whether this be plethoric and robust, or weakly and anæmic. If the latter be the case, the increase of the pent-up menses may be very meagre or even *nil;* and again, if vicarious menstruation be established, the addition *in utero* would naturally be voided, affording a degree of local relief, or, at least, checking for a time the progress of serious symptoms, provided the locality of the vicarious discharge be a safe one.

Among other possible results of this bloody accumulation are enumerated hæmatosalpinx, intra-peritoneal hæmatocele, and hæmatoma of the ovarium, each with its serious consequences. The internal *ostium* of one or both Fallopian tubes may be drawn open by the expansive force of the womb's accumulating contents, which, if not met by tubal obstruction, may ooze out at the *ostium abdominale*, and give rise to an intra-peritoneal hæmatocele and peritonitis. In hæmatoma of the ovarium the formative process is likely to be different. Whether at certain periods of functional activity, when the fimbriæ of the tube are said to clasp the ovary, to receive the ovule from the Graafian vesicle; or whether, at the time of direct communication between the tube and ovary, the fluid of the hæmatometra ever escapes into the bursting vesicle or stroma of the gland, must be left to hypothetical speculation. But hæmatoma of the ovarium as well as effusion into the tube may occur by direct extravasation from congested vessels and yet hæmatometra be responsible for either occurrence, since hyperæmia of the uterine appendages is one of the accompaniments or conditions of the hæmatic tumor we are considering. If, therefore, the already engorged plexuses or network of vessels of the environment be periodically subjected to additional blood-pressure, the bleeding that follows the bursting of a Graafian follicle under normal circumstances may now become sufficiently copious to produce results of a pathological character.

Without stopping to speak of a possible rupture which would allow the secretions to flow off in a natural or harmless direction, adhesions may form with the neighboring hollow organs, and perforation take place into bladder or rectum. Septicæmia from decomposition within the womb is also a great danger. The entrance of urine on the one hand, or of fecal matter or intestinal gases on the other, would be favored by the womb's enfeebled contractile power, as that organ could not empty itself with promptness nor with that degree of force of which it is possessed when developed for a physiological purpose. The pressure of tumors is recognized as a cause of uterine atrophy, and we can readily conceive in hæmatometra that an attenuated condition of the muscular coat might ensue. Another danger of infection may be a vaginal *cul-de-sac* below the point of perforation into either of the hollow viscera mentioned, which would serve as a reservoir for decomposed matter.

Considering the possible results of this condition, no time is to be lost in providing for the escape of the accumulated secretions.

Hymen imperforatum in a large majority of the cases is not discovered before the age of puberty, and the one referred to was doubtless of the congenital variety.

The operation can hardly be called a painful one, but the girl had become so irritable and sensitive from long suffering and repeated examinations, that the puncture by trocar was made under ether. Thirty-two ounces of reddish-brown, chocolate-colored fluid were drawn off without interruption of flow. The canula being removed, a crucial incision with a probe-pointed bistoury enlarged the opening, from which a little fluid oozed. Ergot was administered, but only gentle pressure was applied externally by an abdominal binder. The vagina was gently washed out with a weak solution of the bichloride. The uterus remained too high to be reached by the finger, and an examination by force was uncalled for. The vaginal surface was smooth and devoid of rugæ. As an additional precaution, the external parts were covered with compresses of antiseptic gauze.

It is to be remembered that the imperforate hymen is not a normal but a patho-anatomical structure. On the inner side its mucosa is continuous in cul-de-sac form with that of the vagina, and externally the mucous membrane is continuous with that of the vulva, while between these layers lies a fold of connective tissue. The membranous barrier in this case was found thick and tough beyond expectation, imparting the sensation of soaked leather to the fingers.

The relief was prompt and decided; on the second day there was some pain in the hypogastrium, but no significant rise in the patient's temperature. In four weeks the menses were discharged in a normal manner, and this has recurred at regular intervals ever since.

In the second case alluded to, the woman is close upon forty years of age, and has lived in the marriage relation for half that period, but remains childless. The evidence she relates as pointing to a miscarriage in the third year of her married life, is not conclusive. After that time she enjoyed good health until thirteen years

ago, when she "had a severe fall backward," after which she endured so much pain in trying to void her urine that she fainted. Her physician said she had "dislocated her womb," and used instruments to replace it. She was confined to bed for three weeks and then treated in a hospital in this city; whence she returned home, still in a feeble condition, and remained in poor health for several years. These early troubles are briefly mentioned since they concern the genito-urinary organs, and I will not tax your patience with a history of subsequent maladies which had but doubtful or no connection with the patient's later complaint. Suffice it to say, that after an attack of typhoid fever as far back as 1883, she regained her former good health, and in all the years that followed until the month of May, 1888, the menstrual function was regularly performed. It was then, however, that the lesion which concerns us here appears to have had its beginning. The monthly discharge of blood became scanty, and to the patient it appeared as though "a stringy leucorrhœal discharge had replaced the regular flow." Nor was she as free from pain as she had formerly been during her regular periods. In the following August her menses failed to appear, and the amenorrhœa continued for eight months; that is to say, until she was relieved by the operation mentioned further on. As regular as had been her monthly periods when in health, just so regular were they during these eight months when the attacks of lumbar pains and uterine cramps presented themselves, the severity of which increased with each returning molimen. In vain she now applied for relief both to regular and irregular practitioners. The latter advised her to enter their hospital and submit to a laparotomy for the removal of what they pronounced to be a "fibroid tumor attached to the uterus and left ovary." This advice was not followed, and it need hardly be said that the diagnosis was as incorrect as the laparotomy would have been unwarrantable. The condition grew from bad to worse. From dire necessity the woman had learned to catheterize herself and was enabled by that means to obtain frequent relief from one of her greatest torments.

On the 30th of last March she entered the German Hospital, where she became my patient. On examination the next day, I found a large, smooth, very hard and firm tumefaction pressing low in the pelvis. The os could not be found and there was no discernible discharge from the vagina. No fluctuation was perceptible, either by vaginal or rectal examination. The mass had repeatedly been held by others to be a fibroid; but on hearing the patient's own account of the case, from which the above is a condensed statement, I concluded it to be a hæmatometra, at once verified the diagnosis with an aspirating needle, and on April 2d introduced an ordinary sized trocar and drew off the long pent-up secretions. In penetrating at the indistinct but supposed point of the former os, the instrument imparted the sensation of passing through a wall of considerable thickness before reaching the cavity, showing the obstruction to be something more than membranous. This was probably brought about by a stenosis of the inner os, combined with an endocervicitis and adhesions of the entire cervical canal.

The mahogany-colored, jelly-like fluid, or semi-fluid, could not flow freely through the canula, but came only drop by drop. The cervix dilator therefore replaced the canula, and being used as a director for making a shallow crucial incision, a quart of the tarry substance was drawn off. The cavity of the womb was freely washed out with a continuous stream of the mercuric solution. Ether was not administered. The after-treatment was in the main similar to that instituted in the other case. Recovery was complete, and the patient has menstruated at regular periods several times since the operation.

Dr. John C. Da Costa asked Dr. Gross where he punctured the uterus in the second case? Did he attempt to follow the cervical canal, or did he put the trocar directly into the mass? He congratulated both patients on having fallen into the hands of Dr. Gross, and out of the hands of their previous advisers. Hæmatometra is not of common occurrence, and when we have it, it is usually due to closure of the os, or atresia, so called. The first case reported would, he thought, be found described in the books rather under the head of atresia of the vagina than of hæmatometra; neither could he understand how those who had previously examined and treated the case could have overlooked the nature of the difficulty. They would not have done so if they had heard the late Professor Wallace lecture on atresia vagina, as he used to describe it, with "the bulging membrane looking like a child's head coming out." If they could not have made a vaginal examination, an examination by the rectum would have shown the uterus above and the soft fluctuating mass below, and made the diagnosis for them.

The second case seemed to be due to closure of the cervical canal. This is more common after the application of solid nitrate of silver than people generally are aware. There is apparently something particularly vicious about the application of solid nitrate of silver to the cervical canal. Stronger agents may often be used without producing the trouble it does. The speaker was unable to see how in this case a practitioner could mistake the nature of the trouble. The gravity of such cases often arises from imperfect examination of the parts, and, therefore, ignorance of the condition, and as a result of this—want of timely treatment.

Dr. Lawrence Wolff had had the pleasure of examining the second case with Dr. Gross. He had assisted him in emptying the uterus, and his curiosity having been aroused as to the nature of the chemical changes that had taken place, he secured some of the contents for examination. The microscope showed that there were no corpuscles present. He made the blood test, and secured Teichmann's hæmatin hydrochloride crystals. While there was undoubtedly blood, there was no hæmoglobin, but hæmatin. He thought the question is not altogether solved as to what becomes of the serum-albumin in such conditions. The uterus is not prone to take up serum-albumin, but here it had evidently been absorbed, and nothing but globulin and hæmatin remained, as was found to be the case when the mass was mixed with water, which rendered it turbid, the globulin being insoluble in water. The fact that globulin is not taken up is not generally known. We know that the corpuscles, as a result of pressure, poisons, and other conditions, will break down, and that hæmoglobin will be changed to hæmatin, but it is not generally understood that in hæmatometra serum-albumin, which is diffusible, is reabsorbed and globulin retained. These facts have a bearing upon various pathological conditions, especially

some forms of nephritis, and that is one reason why he had brought up these points in regard to the condition of the blood in these cases.

Dr. Joseph Price said that these congenital forms of atresia were quite common. In the last few years a great many operations have been performed for infantile forms of the female generative organs, and in many of these cases we find atresia. In the last year he had done two sections for regular menstrual molimen without visible flow. The patients had suffered from the age of thirteen or fifteen years to thirty-five, without any menstrual fluid showing itself. In these cases atresia with infantile uteri was found. The appendages were rudimentary. There was no accumulation. In both instances the results have been quite happy.

A few years ago, a lady asked Dr. Price to attend her in her confinement. Conception had immediately followed an operation upon the cervix uteri done by an estimable operator. She had been sterile for five years before the operation. Previous to this she had borne three children. She sent for him after she had been in labor for some time. There had, however, been no show. On examination he found a supra-vaginal diaphragm, without the semblance of os or cervix. He made a careful speculum examination, and sent for a friend, a man of good judgment and experience. The head was engaging, but no os could be found. A crucial incision was made in this diaphragm, and she was delivered of a healthy child without trouble. She made a good recovery, and has since borne children. In this case, although a canal had been left, there were probably some granulations which subsequently closed the channel.

Ten days ago he operated upon a cicatricial case. The woman had borne four healthy children, but had not menstruated for some years. He found but little accumulation. There had been extensive sloughing, and he had to make a vagina throughout. A portion of the blood had apparently been absorbed. The material found in these cases is usually of a hard character similar to that found in hæmato-salpinx. It will make a black mark, and can be used as a crayon.

The discharges from the tubes of which Dr. Gross spoke, he was satisfied last only a short time. The irritation is sufficient to provoke occlusion of the tube, and we have the clubbed condition of the tubes seen in accumulation of fluid in the tubes. The tubes look like the end of an amputated finger. I have here two specimens illustrating this point. The woman from whom this was removed never conceived. There have been salpingitis and local peritonitis, causing closure of the pavilion. Here we have a broad ligament cyst, an occluded tube, and a typical hydrosalpinx. Schœder gives an interesting discussion of this entire subject, and cautions care in the examination that leakage or rupture may not occur. It is evident from his remarks that this accident had occurred in his hands.

Dr. Gross, in reply to the question of Dr. Da Costa, stated that there was only a point indicating where the os might have been. He followed this in the direction one would suppose that the canal would take. It was some time before the trocar reached the cavity.

In regard to the first case, an examination *per rectum* might have revealed a small uterus if the fluid had been contained only in the vagina. This case was, however, of six or seven months' standing, and the secretions, after filling the vagina, had also dilated the cervix and uterus. Here the term hæmatometra is also used. When the vagina only is filled, it is an hæmatocolpos. To be more exact, unless we object to long names, the term hæmatometrocolpos would express the condition when both vagina and uterus are involved.

Dr. Gross was obliged to Dr. Wolff for his interesting remarks in regard to the character of the fluid, which made the report of the case more complete.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting September 5, 1889.

John C. Da Costa, M.D., in the Chair.

Dr. John C. Da Costa read a paper entitled,

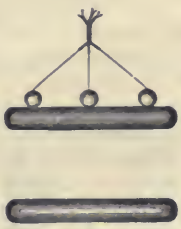
AN EASY METHOD OF REPAIRING THE PERINEUM.

He did not claim anything new, the operation being the result of a combination of old ideas, and an easy and simple method, answering equally well whether the tear is long or short.

Mr. Lane, of London, in 1860, used ivory bars with small perforations for approximating the edges of the perineal tear, and reported thirty consecutive cases without a failure. Dr. Thompson, of Washington, used flat rubber bars with small holes in them, and has reported fifty-three consecutive cases, all cured. Dr. Thomas, after speaking of the quill suture, leads us to infer that he uses perforated bars, and states that he does not recall a failure in his experience.

The operation which Dr. Da Costa recommended is very simple and the instruments are few: a pair of blunt-pointed scissors, a perineal needle, a little silver wire and a few shot, a shot-compressor, and two bars shaped like the accompanying cut:

Fig. 1.

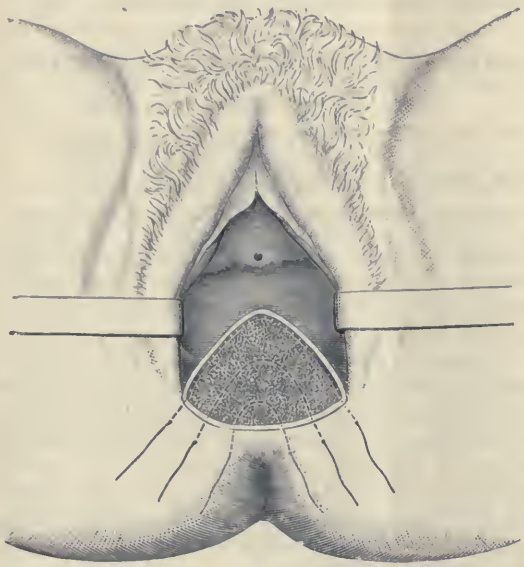


Bar, ½ size.

The operation is begun at the bottom ot the tear in the vagina. With one or two fingers in the rectum, a little slit is made at the lowest point and the torn tissue is denuded. It is important to get rid of all scar tissue, for unless this is done good union will not be secured. After freshening the bottom of the tear, the scissors are turned to the right and to the left, and each side is denuded. Then, with four cuts of the scissors, the loosened cicatricial tissue is removed. The first stitch is made near the bottom of the raw surface and is passed three-fourths of an inch from the edge of the cut portion, buried the entire distance, and comes out on the other side equally far from the border of the wound. The needle is then threaded with silver wire and withdrawn. The second stitch is put in in the same way. The third stitch is started in the skin like the others, three-fourths of an

inch from the edge of the cut, and carried along just under the edge of the freshened surface the whole way around. This is the most important stitch of all, and was introduced by the late Albert H. Smith, when one of the physicians-in-chief at the Nurses' Home some years ago. The stitches are buried throughout, and only three are used in the operation. All that is necessary is to bring them out in a straight line.

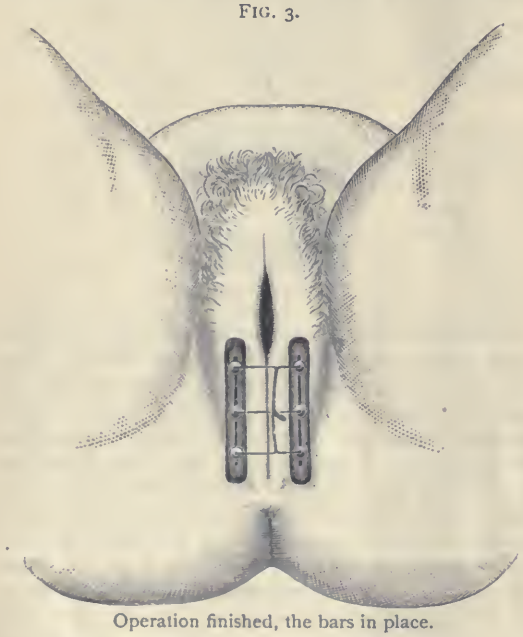
FIG. 2.



Surface denuded, and stitches in place.

After this, the wires are slipped through slotted rubber bars, on each side, and shot clamped on them. After the shot are clamped, the ends of the wires are twisted

FIG. 3.



Operation finished, the bars in place.

over the median line, and passed through a piece of catheter. Any dressing may then be applied.

The advantages of this operation are many. In the first place, but three stitches are used. Probably every gynecologist has seen cases where there has been deep quilting, and where the tissue has sloughed out because the circulation has been so interfered with that nutrition could not be maintained. These three sutures interfere very little with the circulation, and they hold together the deep parts of the wound. When inflammation takes place, the wires over the shot are cut; the bars spread and relieve the tension and prevent any tendency to sloughing, while still supporting the parts.

This is a different operation from that in which the denudation is made in curved lines, and where another operation is required for any existing rectocele. The operation described above will include a rectocele. It is better than another popular operation, which does not restore the triangle which nature made, but makes a beautiful skin-flap, which looks well from the outside, but affords no support.

DR. JOSEPH PRICE said that there were a few points about which he would like to speak in connection with this operation. As Dr. Da Costa had pointed out, this is an old operation, and can be found in all the text-books. It is the old operation upon the posterior wall, and has the merit referred to, of, in many cases, making a superficial or skin perineum. The principle of suturing described is not adopted in any other branch of surgery, and he was sure Dr. Da Costa would not apply this principle to any other portion of the body. He said that sometimes he denudes a distance of three inches. In no other part would he approximate such a surface with three sutures, as three sutures will not close it.

One of the illustrations shows what takes place in many perineal tears. The skin-perineum side is not harmed; but if a finger is placed in the sulcus on one side, a sense of resistance is found which is absent on the other side. The sulcus is a deep one, and is a lateral tear. As has been remarked by Dr. Deaver, "It is like the lateral cut for stone." In such a case the operation is almost a unilateral one. It is just such a state of affairs that Emmet had in view in his classical operation for the restoration of the pelvic floor, and he has been wonderfully successful. The needle used should be very small.

DR. DA COSTA, in reply to Dr. Price, said that the criticism made in regard to one of the illustrations had nothing to do with the subject under discussion. If there is a line of cicatricial tissue on one side, we do not need to denude both sides to repair the condition, for it is a simple matter to remove the scar tissue and sew it up, as in any other surgical operation.

DR. JOSEPH HOFFMAN made a

REPORT OF A SERIES OF ABDOMINAL SECTIONS, WITH SPECIAL REFERENCE TO COMPLICATIONS.

The list of operations may be classified as follows: one strangulated ventral hernia; one appendicitis and hæmatocele; sixteen cases of ovarian and tubal disease with adhesions, inflammation, and occlusion of the tubes, with one death, the result of sepsis from a miscarriage brought on instrumentally. In other words, he believed the tubes were in a septic state, and gave rise to the peritonitis.

In two cases the gonorrhœal origin of the pyosalpinx was well established; in two the history pointed to a post-puerperal origin; in the remaining two the origin was

doubtful, though in one of the cases specific trouble was strongly suspected.

One case died of shock—never coming out of the anæsthetic. She was a hard drinker.

In two cases the tumor removed was a dermoid cyst, both of which were small. In one of these cases the uterus was rudimentary, though the woman had for a long time worn a pessary for a so-called displacement, introduced by a specialist in gynecology.

In two cases exploratory incision was made, and the women recovered quickly. One of these died soon after tapping; from what cause he did not know. The second exploratory incision was due to an error in diagnosis. The uterus was retroverted, a miscarriage having occurred a short time previously. There was a peculiar thickening of the right broad ligament, which led to the blunder.

In the thirty-three operations recorded, two deaths have occurred. The first occurred early in the series. In the last twenty-six cases there has been but one death, and the last eighteen cases have been without a death.

Dr. J. Price said that the mortality of this group of cases was exceptionally low. The pus cases and the extra-uterine cases interested him the most.

Dr. Joseph Price reported

TWO OPERATIONS FOR EXTRA-UTERINE PREGNANCY.

The first case was that of a white woman, aged thirty-five, nursing a child of thirteen months. The menses appeared on the fourth month of lactation, and remained perfectly regular at intervals of twenty-seven days with four days' duration; finally, they were absent two periods, and paroxysms of pain and collapse asserted themselves. He immediately operated for ruptured tubal pregnancy, and found about a quart of clotted blood in the peritoneal cavity; tubal rupture on the left side, and hydrosalpinx on the right side. These were removed, and recovery occurred.

The second case occurred in a negress, and is of great interest, as ovarian cysts are very rare in true Africans, and microscopical examination gave a doubtful result, although the growth resembled one very closely. One point of great interest in connection with these cases that survive the rupture and go into the hands of the surgeon, is the marked difference in the character of the hemorrhage from those that go into the hands of the coroner—and they are numerous. In the latter cases the hemorrhage is overwhelming, and the abdomen is found full of blood. The surgeon finds probably one-fourth that amount of blood. Dr. Formad, the coroner's physician, states that in one case he found the peritoneum deluged with blood, and the fœtus washed up on the pancreas.

Dr. J. M. Baldy said, though Dr. Price had stated that ectopic gestation is rare in the full-blooded negro, that he should like to place on record such a case. The woman had been having children at regular intervals of two years for eight or ten years. The last time, when her time came to become pregnant, it proved to be a pregnancy of the tube. She was operated on and saved.

Dr. J. M. Baldy reported a case of

FIBRO-CYSTIC TUMOR OF THE UTERUS.

Mrs. A., aged thirty-five years, married, no children. She had a lump in her abdomen for fifteen years, which remained quiescent until within the last two years, since which time it has grown rapidly. The menses gradually became irregular and profuse; bowel and bladder symptoms were severe; pus appeared in the urine; the abdomen was constantly swollen, and very painful; and the general health had begun to suffer severely. Examination showed a uterine tumor, and its removal was advised, the dangers of the operation being fully explained. The operation was eagerly accepted. The tumor was removed, and proved to be an extremely nodular fibroid, which had undergone cystic degeneration in part, and in other parts was quite œdematous. The mass was firmly wedged into the pelvis, and was delivered with the greatest difficulty, leaving practically no pedicle at all. The case was treated by supra-vaginal amputation, a wire nœud being first placed around the lower portion. The stump was treated by the extra-peritoneal method, as advocated by Bantock. After the tumor had been cut away, there was left a stump with a diameter of over three inches; this was gradually trimmed away until it was reduced to about an inch and a half in diameter.

This case presents the opportunity for a few remarks on the method of treating the pedicle in hysterectomy, and on the use of electricity in fibroid tumor of the uterus.

There are two methods of treating the stump — the intra-peritoneal, as advocated by Martin, and the extra-peritoneal, as advocated by Bantock. All other methods devised or proposed are simply modifications of these two, and are far from being as good as the originals.

What is wanted are results, and in questioning different gentlemen who are experimenting with the so-called improvements in hysterectomy, it has been found almost universally that their losses amount to from thirty per cent. to fifty per cent. The patients who get well may do so quickly, and the operations may be very beautiful, theoretically, but the results are murderous! The results obtained by the extra-peritoneal method are, at present, very decidedly the best, and have proven eminently satisfactory in his hands.

Martin, by the intra-peritoneal method, reports a series of eighty-four cases, with twenty-five deaths. Later, he had thirty cases, with three deaths; and still later he had "another series with good results;" and last, "a series with bad results." And so, after an experience of over 125 cases, he ends up with a series which is so bad that he does not publish it. In contrast with this stands Bantock's record, by the extra-peritoneal method, of fifty-seven cases with only twelve deaths, and his results continually getting better to the end. He now has had a run of thirty or forty cases without a death. These figures speak for themselves. After all his experience, Martin says "we must wait for a larger number of cases before deciding this question."

Of the twenty-five deaths met with by Martin in his first eighty-four cases, fifteen died of "bleeding, embolism, and collapse," all of which, of course, means hemorrhage. By the extra-peritoneal method, these would all have been saved, as bleeding cannot possibly occur if the wire does not slip or break. Again, ten of Martin's cases died of sepsis; this also is much less likely to happen by the extra-peritoneal method, as all cut surfaces are outside the peritoneal cavity, in plain sight, and under perfect control.

When Martin has finished his operation and drops the

stump, the appearance to the naked eye is simply perfection. On the other hand, when the stump is left outside, as is taught by Bantock, the after-treatment is often tedious, and the convalescence prolonged. If the stump is not perfectly dry, it is apt to suppurate, and, at best, it is an unsightly affair. But when we contrast the results, there can be but one choice, if we give proper consideration to the safety of our patients. Not only are Martin's own results bad, but in the hands of less expert and experienced operators the mortality is very high. Even Bantock has lost four out of five cases by the intra-peritoneal method.

CORRESPONDENCE.

A SIMPLE METHOD OF TREATING UMBILICAL HERNIA IN INFANTS.

To the Editor of THE MEDICAL NEWS,

SIR: The appliance described under this heading in the number of THE NEWS for October 5th is very similar to one which I have successfully used for twenty-five years past, and which originated with myself. It fulfils the requirements stated to be essential—it is "non-absorbent, non-irritating, and of such material that it will remain in place for at least a week, notwithstanding daily bathing." It has one great advantage over the "hard-rubber, slightly oval, plano-convex lens with two wire loops," and is readily attainable everywhere and at all times. I use the large removable head of a common picture-nail. This is applied to the hernia and fixed in place by a strip of adhesive plaster. My first attempt was with the half of a toy marble. The nail-head is better because larger and less convex. This simple appliance is at command everywhere, and I only thought it worthy of presentation to the profession when I read the article alluded to above.

Very truly yours, J. C. REEVE.

DAYTON, OHIO.

NEWS ITEMS.

The Moral Sense of a Physician.—Those members of the profession who believe in the condition known as "moral imbecility," will have their opinions greatly strengthened by the following letter received by the London *Lancet* in reply to an indignant protest made by that journal concerning Dr. Allwright's plagiarism of Dr. Reeve's article in Hirst's *System of Obstetrics*:

"*To the Editors of The Lancet*—SIRS: In answer to your favor, the article mentioned obtained its foundation from the American *System of Obstetrics*, but it was not intended to be a copy, nor, I think, is it. An article in Buck's *Hand-book of the Medical Sciences* contains similar facts upon the same subject, as, indeed, must any other history on the same subject. I am very sorry if an objection has been raised to the article appearing in print. I have practised both the method of administering chloroform and also that of ether, which are suggested in the article, for some time. Perhaps you will offer my apology, and that any offence against Dr. Hirst was unintentional. I am, sirs, yours obediently,

"FRED. W. ALLWRIGHT."

"BRIGHTON, Sept. 29, 1889."

College of Pharmacy.—Another college of pharmacy is to be located at Brooklyn, New York, controlled by the Pharmaceutical Society of King's County, which has held the matter under advisement for some time in the hands of an influential special committee. It has been satisfactorily demonstrated that there are enough young druggists from Brooklyn attending the New York colleges to form a strong class, if they can be shown that a home institution has been founded that is worthy of their support.

A Maritime Medical Association.—At the last annual meeting of the New Brunswick Medical Society, held at St. John, a plan was favorably considered for the bringing about of a union between the societies of the provinces of Great Britain lying eastward from Quebec Province. A committee of conference was appointed, and another year will probably see the formation of a strong and influential Maritime Medical Society, combining the membership in Nova Scotia and New Brunswick, and attracting to it many physicians who have not hitherto associated themselves with any organization.

The Dedication of Clark University.—The dedication of the new university at Worcester took place on the 2d instant, and was a memorable occasion. It marked the landing of a puritanical group of educators in the Bay State, and yet "Severe Science" is the inscription on the standard set up by Dr. Stanley Hall, the president and inspirer of the new departure. It is the first University of the Basal Sciences which has made its appearance in America: these basal subjects being five in number, namely, Psychology, Biology, Physics, Chemistry, and Mathematics. To medical students who intend to obtain a good foundation, this will prove attractive by reason of the advantages to be found here in biology, physiology, neurology, anatomy, and chemistry. Dr. Stanley Hall, in his inaugural address, quoted an eminent European physician as his authority for the opinion that the young man who hurries on to the more attractive fields of the clinic and the amphitheatre, to the neglect of the more abstruse studies, is in the position of the prodigal who becomes prematurely old and impotent. Dr. Hall uses the time-worn adage, "Godlike is the physician who is also a philosopher," and claims that this proverb is far more true to-day than when Hippocrates framed it.

The Continental Anglo-American Society.—The Continental Anglo-American Society, which has recently been formed, held its first meeting in Paris on the 30th of September, Sir Spencer Wells occupying the chair as one of the Honorary Presidents. Among those present were Drs. Alan Herbert, Faure-Miller, Thomas Linn, and others, of Paris; Dr. Sandwik, of Cairo; Dr. Stanley M. Rendall, of Aix-les-Bain, and many others. In the evening a dinner was given at the Grand Hotel. Among the guests were Dr. Norris, of New York, and Dr. Rodgers, of Illinois.

The Society has been organized chiefly through the endeavors of Dr. Thomas Linn, the Honorary Secretary, and already has about seventy-five members.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING OCTOBER 12, 1889.

BRIGHT, G. A., *Surgeon*—Detached from temporary duty at the Naval Academy, and placed on waiting orders.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, OCTOBER 26, 1889. NO. 17.

ORIGINAL ARTICLES.

THE DIAGNOSIS AND TREATMENT OF FUNCTIONAL DISORDERS OF THE STOMACH.[1]

BY FREDERICK P. HENRY, M.D.,

PHYSICIAN TO THE PHILADELPHIA AND TO THE JEFFERSON MEDICAL COLLEGE HOSPITALS.

THE distinction between functional and organic affections is by no means sharp. They encroach on each other in such a manner that the imaginary line which separates them is remarkable for its sinuosities, and here and there is so faint as scarcely to be traced. In both these respects it resembles the lines of demarcation, the so-called sutures, which both separate and unite certain cranial bones. These statements, while true in general, are of particular application to the diseases of the stomach, of which the disorders of function are generally, sooner or later, associated with some organic defect. Thus, disorders of secretion are frequently accompanied with some impairment of motor power, or even with some alteration in the secretory tissue.

Bearing in mind the difficulties inherent in the subject of functional disorders of the stomach, I will begin by stating that they are all included under the heads of disordered secretion, disordered motion, and impaired innervation. It is self-evident that these three classes of affections are not only closely associated, but interdependent. Like the three primary colors, they give rise, by their blending, to various affections in reality composite or secondary, but yet of primary importance.

My remarks upon these three modes of disordered function must be very brief and imperfect, for an elaborate discussion of either one of them would occupy more than the time allotted me.

To make myself thoroughly understood, I am obliged to make some preliminary remarks on the chemistry of normal digestion. It is well known that pepsin will not manifest its digestive power except in the presence of an acid concerning the nature of which there has been great difference of opinion. It has been variously regarded by men of the highest attainments in chemistry and physiology, as phosphoric, sarco-lactic, lactic, and hydrochloric; but, little by little, the first two were positively excluded from the discussion, which became limited to lactic and hydrochloric acids. For many years physiologists were at variance concerning these two acids, one set regarding lactic as undoubtedly the acid of the gastric juice, while another was equally positive that this acid could be no other than hydrochloric. For example, I myself was taught, by so great a physiologist as the late Professor John C. Dalton, that the acid of the gastric juice was lactic. The cause of these discrepancies is now plainly manifest, for during gastric digestion the reaction of the gastric contents is at one stage due to lactic, at another to hydrochloric acid. In fact, normal digestion, considered with reference to the presence of these acids, may be divided into three stages. During the first, which lasts about half an hour, lactic acid is present alone; later, lactic and hydrochloric acids are present simultaneously; and, finally, there comes a stage when the only acid present is hydrochloric. The last stage may begin half an hour after eating, or, at the latest, an hour thereafter—*i. e.*, in health, for in disease the duration of these three stages may be variously modified. The most important period of digestion is undoubtedly the last, for it is well established that pepsin acidified with hydrochloric acid digests more actively than when acidified with lactic. In fact, lactic acid is an adventitious product of the fermentation of carbohydrates, and is always found in the first stages of the digestion of a mixed diet—meat, bread, potatoes, etc.—but if egg albumen alone be administered to a fasting animal, and the contents of the stomach examined shortly afterward, hydrochloric will be the only acid detected.

The examination of the contents of the fasting stomach, which would long ago have settled this important physiological question, has only recently been undertaken. In the first place, it disproved the prevalent medical belief that the fasting stomach is empty. Rosin[1] introduced a soft-rubber tube into the stomachs of a number of individuals free from gastric disease, the time chosen for the experiments being the early morning hours before breakfast. In only two out of forty-four such experiments did he fail to obtain a sample of gastric juice, the amount of which in the forty-two positive cases varied between three and ten cubic centimetres. In thirty-one of these forty-two cases the fluid thus obtained contained free hydrochloric acid. The question whether the fasting stomach contains pepsin received

[1] Read before the Philadelphia County Medical Society, October 9, 1889.

[1] Dr. Heinrich Rosin: Deutsche med. Wochenschrift, November 22, 1888.

a positive answer in all the cases, six in number, in which the secretion was submitted to the digestive test. The important question whether lactic acid is present in the juice of the fasting stomach received a negative answer. In nearly all the cases the secretion gave the well-known biuret reaction, indicating the presence of peptone; but as this reaction is also given by the saliva, as well as by the nasal and pharyngeal mucus, it is reasonable to suppose that the peptone was swallowed with these secretions.

Now let us pause and consider what light these physiological facts throw on the disorders of gastric function.

In the first place, it is readily understood how the first, or lactic acid, stage of digestion may encroach upon the second and third stages of that process; but the question with which we are now concerned is whether this excessive lactic acidity gives rise to symptoms. There can, I think, be no doubt that such a condition is the chief cause of *pyrosis*. I do not go as far as Bourget,[1] who considers it the sole cause of that annoying symptom. He was led to this conclusion by finding that he could not produce pyrosis in his own person by swallowing two glasses of water containing 5 per cent. of HCl, but that it was experienced a few minutes after taking the same amount of water containing 1 per cent. of lactic acid with a trace of butyric acid. Pyrosis is undoubtedly a symptom of excessive lactic acid fermentation, and the earlier it appears after the ingestion of food the more certainly is it due to this cause. It is also a symptom of undue acidity of the gastric juice, or hyperacidity, it being always understood where this term is used that the acid in excess is HCl. The term *pyrosis hydrochlorica* has been applied to this condition. Finally, pyrosis is not necessarily due to an excess either of HCl or lactic acid, but may even make its appearance when the gastric juice is of subnormal acidity. It may be, in short, one of the symptoms of nervous dyspepsia, in which affection the gastric nerves are so hypersensitive as to suffer during a digestion which is, in all other respects, normal.

By hyperacidity is meant, as the term implies, that the gastric juice, which may be of normal or increased amount, contains an excessive amount of HCl. This condition is not to be confounded with hypersecretion, which means that the gastric juice is secreted in excessive amount during the intervals of digestion. As I have stated elsewhere, the former consists in a too liberal response to a physiological summons, while the latter is gratuitous. Hyperacidity occurs most frequently in connection with gastric ulcer, and, therefore, scarcely comes within the range of our subject. Hypersecretion, on the other hand, is a mere exaggeration of the normal processes, for—as demonstrated by the researches of Rosin, to which I have already alluded—the fasting stomach contains an appreciable amount of gastric juice. The limits within which the secretion of gastric juice, by a fasting stomach, may be considered physiological, are as yet unknown. It is certain, however, that the functional gastric disorder known as hypersecretion constitutes a well-marked pathological condition. Its principal symptoms are increased thirst, acid eructations, nocturnal attacks of epigastric pain, and dilatation of the stomach. The digestion of carbohydrates is greatly impaired, while that of the albuminous substances proceeds with abnormal vigor. Positive proof of this condition is afforded by the sound employed in the following manner: The stomach is thoroughly washed out in the evening and the patient directed to fast until the following morning, when the sound is again introduced. If hypersecretion exists, a quantity of fluid, varying from eight ounces to a pint, may be withdrawn: This fluid is colorless or slightly greenish, of viscid consistence, strongly acid, the acid being hydrochloric, and digests albumen rapidly. In a word, it is gastric juice.

Hypersecretion is probably always caused by disordered gastric innervation. It occurs in two forms, the one continuous, the other paroxysmal. The latter often coincides with the *crises gastrique* of tabes, and in such cases the neurotic character of the affection is plainly evident.

A knowledge of the absorbent power of the stomach is of diagnostic value, and may be obtained by the following test, first employed by Penzoldt and Faber[1] in 1882. Three grains of potassium iodide are administered in a gelatine capsule, and the saliva, which has been previously shown to be free from iodine, is tested every minute for this substance. In dealing with a healthy and empty stomach, the first iodine reaction will be obtained in from six and one-half minutes to eleven minutes. If the drug be administered immediately after a meal, the iodine reaction will not appear until from twenty to thirty, and may even be delayed until forty-five minutes have elapsed. By this means it has been shown that in various pathological conditions, such as cancer, ulcer, and chronic catarrh, absorption from the gastric mucosa is retarded. It can be readily understood that, in certain cases, a diminished absorption from this mucous membrane may be highly conservative. Litten[2] has demonstrated by the test just described, a diminished power of absorption in cases of atrophy of the mucous membrane of the stomach. Now, in many such cases, especially in the forms associated with pyloric stenosis and consecutive dilatation, the stomach may contain in its fermenting

[1] Revue Méd. de la Suisse Romande, No. 12, 1888.

[1] Berlin. klin. Wochenschrift, No. 21, 1882.

[2] Deutsche med. Wochenschrift, Nov. 22, 1888.

and putrefying contents an amount of ptomaines sufficient, if absorbed, to cause death by acute poisoning.

The usual precautions are to be taken in the administration of gelatine capsules; *i. e.*, they should not be given to a patient who is taking either alcohol or tannic acid, as both these substances render the gelatine insoluble.

It is often of diagnostic value to obtain some idea of the motor power of the stomach, which some authorities are inclined to regard as the most important function of that viscus. Until quite recently, the only method of acquiring such information was that introduced by Leube, and consisted in the introduction of the stomach-tube seven hours after a meal; *i. e.*, at a time when the food should have passed into the intestine. The presence of food at such a time would indicate an impairment of motor power, and the degree of the latter would be in direct ratio to the quantity of the former. This method is crude, and inapplicable to most clinical purposes.

The peculiar properties of salol led Ewald and Sievers to employ it for testing the motor function of the stomach. This drug remains insoluble and undecomposed in the stomach, but splits up into carbolic and salicylic acids when it comes in contact with the alkaline secretions of the intestine. The salicylic acid is excreted with the urine, in which it may be detected by suitable reagents, and the time between the administration of the drug and the detection of the salicylic acid in the urine is indicative of the motor power of the stomach. These properties of salol seem to render it peculiarly suitable for testing this function. With this object in view, fifteen grains of the drug are administered in capsules or pills, and the urine examined at frequent intervals. The first appearance of salicylic acid in that fluid shows that the salol has passed into the duodenum, and has been absorbed and excreted. I mention this ingenious test, for the purpose of showing the direction of present research in the diagnosis of disorders of the stomach, although I believe it can never come into general use. In the first place, the chemical test for salicylic acid in the urine is, as Stintzing[1] points out, an elaborate one, and, in the next, it is impossible for most persons to urinate at such short intervals as it demands. Again, Bourget[2] has shown by experiments on his own person that the diet is of great importance in determining the time in which salicylic acid appears in the urine. After eating nothing but meat and a glass of water containing 2 per cent. of HCl, the salol test was applied and salicylic acid detected in the urine in from one hour and a quarter to one hour and a half after the repast, whereas when fruit was eaten two hours before a meal consisting of meat and vegetables, the salicylic reaction was obtained in from fifteen minutes to half an hour. These discrepancies are explained in the following manner. The fluid contained in the first portion of the small intestine is not always alkaline. On the contrary it is often acid, its reaction depending to a large extent on the quantity of acid poured into the duodenum by the stomach. If to the gastric juice, already acid, there be added an additional quantity of HCl, as in the first experiment of Bourget, the chyme will have to traverse an unusually long section of intestine before it is neutralized, and the salol contained in it will be longer than usual in finding the alkaline medium in which alone it can be decomposed. On the other hand, by rendering the intestinal juice unusually alkaline, for example by eating fruit, of which the organic acids are decomposed into alkaline products, the chyme will be rapidly neutralized in the intestine and the salol speedily decomposed.

Huber[1] proposes the following modification of the salol test: The patient takes a dose of salol, and his urine is examined on the following day at stated periods. The longer the time during which the salicylic acid is detected in the urine, the weaker is the motor power of the stomach. In certain cases of undoubted motor insufficiency, the salicylic acid reaction could be obtained on the second day after the drug had been swallowed.

Klemperer[2] recommends the following test of the motor power of the stomach, on the score of greater accuracy. He injects a certain amount (100 grammes) of olive oil into the stomach, and at the end of two hours withdraws what is left. Oil being a substance that is not absorbed by the stomach, the difference between the amount injected and that withdrawn indicates the motor power. A number of experiments proved that a healthy stomach will discharge between 70 and 80 grammes of oil out of 100 in the course of two hours. In thirteen cases of gastric catarrh, this test showed a decided diminution of motor power, the amount of oil expelled in two hours varying between 23 and 44 grammes, just about half the quantity discharged in the same time in health. For obvious reasons this test is difficult of application, and Klemperer himself admits that it is not applicable in private practice.

I have now briefly alluded to the principal disorders of secretion, and have mentioned the most approved modern methods for detecting those of motor function. The third division of my subject is disorders of innervation, which can only be dealt with in the most cursory manner.

[1] Münchener med. Wochenschrift, Feb. 26, 1889.
[2] Loc. cit.

[1] Münchener med. Wochenschrift, 1889, No. 19.
[2] Deutsche med. Wochenschrift, 1888, No. 47.

Nervous dyspepsia has acquired a permanent position in nosology since its introduction by Leube,[1] in 1879, although his conception of the affection has undergone some decided modifications. Leube supposed the chemistry of digestion to be always normal in nervous dyspepsia, whereas numerous exceptions to this rule are now recognized. He also supposed the affection to be an independent or idiopathic one, whereas it is now regarded as a neurosis which seldom finds its sole expression in the gastric and intestinal nerves, but is, in most instances, a part of a general state of neurasthenia. For the latter reason, the terms neurasthenia gastrica and neurasthenia vago-sympathica have been applied to it, but nervous dyspepsia is, and doubtless will continue to be, the one most commonly employed.

The chief symptoms of nervous dyspepsia are eructations which, unlike those of gastric catarrh, are mostly tasteless and odorless, a sense of pressure and fulness in the epigastrium, and pain which is often independent of the quality of the food. A mouthful of water, for instance, will often give rise to severe pain, as is the case with a patient now under my care at the Jefferson Medical College Hospital. As a rule, however, pain is most readily induced by fatty and acid articles of food. Pyrosis is, as already stated, a symptom of this affection, and is sometimes peculiar in being associated with a subacid condition of the secretions. A capricious appetite is a characteristic feature of many of these cases. There may be complete anorexia alternating with periods of hyperorexia or bulimia. This morbid appetite may suddenly manifest itself at the most unseasonable hours, as in a case mentioned by Decker[1] in his excellent article on nervous dyspepsia. The individual in question was constantly roused from sleep by a sense of hunger, which he was oblige to appease with a hearty meal, composed of soup, eggs, cold beef, etc.

Insomnia is a frequent symptom of this disorder, whereas, on the contrary, in quite as many cases the patient is habitually drowsy. With reference to the stools there is nothing characteristic, except that they are not regular, a state of constipation often alternating with one of diarrhœa. The diagnosis is made by the exclusion of cancer, ulcer, and catarrh. The chief difficulty consists in distinguishing this condition of neurasthenia from one of chronic catarrh; but there are certain points which, if borne in mind, will prove of great value in this differential diagnosis. In catarrh the feelings of pressure and fulness are experienced directly after eating, and reach their maximum when digestion is at its height; whereas in nervous dyspepsia these symptoms are very variable with reference to the time of their appearance, and are often relieved by eating. They may also disappear for weeks or even months. The appetite in nervous dyspepsia is, as already stated, capricious, whereas in catarrh it is permanently absent. Valuable diagnostic aid may sometimes be derived from the effects of treatment. For example, it is said by Decker[1] that the Carlsbad cure, which is so beneficial in cases of gastric catarrh, is invariably injurious in nervous dyspepsia.

I have now reached the last and most important part of my subject, viz., the treatment of functional disorders of the stomach; and here I must repeat what I stated with reference to their diagnosis, that the time suffices for nothing more than a few therapeutic suggestions. I will first consider the treatment of pyrosis, a symptom to which I called your attention in an early part of this paper, and I do this, not only because it comes first in order, but also because its consideration will furnish some useful therapeutic hints. There are, as I stated, at least two kinds of pyrosis, one due to an excess of lactic acid and the other to an excess of hydrochloric; and the time-honored treatment of this symptom, without reference to its cause, has been the administration of sodium bicarbonate. The following experiment of Bourget shows that this drug, in the commonest form of pyrosis—that caused by an excess of lactic acid—is, at most, an evanescent palliative. To a patient with chronic gastric catarrh and dilated stomach, was given a certain amount of soup, some of which was withdrawn two hours later, and found to contain 1.68 per cent. of lactic acid and no HCl. It was then exactly neutralized with sodium bicarbonate and placed in an incubator. At the end of half an hour it contained 4 per cent. of lactic acid. It was again neutralized and about eight grains of sodium bicarbonate added in excess. At the end of an hour free lactic acid was found. On the other hand, HCl given during a meal was found to prevent the formation of lactic acid. This corresponds with the physiological fact that the lactic acid formed during the first half hour of digestion is speedily suppressed by HCl. Bicarbonate of sodium undoubtedly neutralizes any lactic acid that may be present in the stomach, but instead of preventing its further formation, seems to increase it by creating an alkaline medium favorable to the growth of the organism of the lactic acid fermentation. Lactic acid pyrosis, therefore, is to be treated by the administration of HCl during, or immediately after, a meal.

Pyrosis hydrochlorica may be due to hyperacidity or hypersecretion. In the first instance, it is to be treated by the administration of an alkali several hours, from four to six, after a meal. In hyperacidity the gastric juice is abnormally active, its physiological work is soon performed, and then it expends its

[1] Deutsches Archiv für klin. Med., Bd. xxiii., 1879.
[2] Münchener med. Wochenschrift, May 28, 1889.

[1] Loc. cit.

superfluous energies upon the unfortunate patient. Having waited until its work is done, it is rendered powerless for mischief by the administration of an alkali, just as in peptonizing milk we boil the mixture or place it on ice to prevent the process from going too far.

The most successful treatment of hypersecretion consists in the methodical washing out of the stomach, preferably just before the principal meal, and the administration of alkalies. The latter should be given in large doses, for, as is well known, the administration of a small dose of an alkali will be followed by an increased secretion of gastric juice. Thirst is often excessive in these cases, but water should not be allowed except in small quantities, as it tends to increase the dilatation which is usually present. When the sense of thirst becomes unbearable, it is better to obtund it, as Riegel suggests, by the administration of small doses of opium than to permit the ingestion of large quantities of water. The diet should, at first, consist exclusively of albuminous substances, as carbohydrates are only partially digested, and by their fermentation aggravate the disease. Dr. Roberts, of Manchester, observing a profuse flow of saliva in cases of acid dyspepsia, and believing it to be a provision of nature for relieving the surplus acidity of the stomach, recommends the use of substances that will provoke its secretion, such as gum lozenges containing a small amount of ginger, cayenne pepper, or pyrethrum. He has thus experienced relief in his own person and given it to others.

In cases of motor insufficiency, in addition to general hygienic measures, the vegetable bitters, especially strychnia, and alcoholic stimulants may be used with advantage. Klemperer[1] found that both substances hastened the exit of food from the stomach.

The treatment of nervous dyspepsia must vary with the cause producing it. One case will be cured by restoring the uterus to its normal position; another by curing a chronic constipation or expelling a tape-worm; still another by allaying an irritation of the spine. A restricted diet, or one of milk only, which is always beneficial in catarrh, is of little or no benefit in cases of nervous dyspepsia. General supporting measures, massage, electricity, the bromide salts, and, if anæmia exists, arsenic and a mild non-constipating preparation of iron, such as the potassio-tartrate, are the chief indications. I believe also, from a limited experience of the measure, that lavage may sometimes be of decided service in soothing a hyperæsthetic mucosa.

Dr. John Guitéras delivered the address before the semi-annual meeting of the Pathological Society of Philadelphia, on Thursday evening, October 24, 1889.

[1] Loc. cit.

EXPERIMENTAL STUDIES ON THE ETIOLOGY OF TYPHOID FEVER.[1]

By B. K. RACHFORD, M.D.,
DEMONSTRATOR OF BACTERIOLOGY IN THE MEDICAL COLLEGE OF OHIO.

In a discussion[2] before the Cincinnati Academy of Medicine, November 5, 1888, I called attention to the fact that experimental ptomaine poisoning, as well as clinical evidence, justified the belief that not only the fever, but all other constitutional symptoms of typhoid fever are caused by ptomaines. If this be true, then why are the nervous and other constitutional symptoms not in accord with the fever? Why, if poisonous alkaloids produce both fever and nervous symptoms, is there not a closer correspondence between the two?

The following explanation, founded on the ptomaine observations of Brieger, was offered: Brieger found that the ptomaine formed depended, to a great extent, on the kind of albuminous material in which the microörganisms were growing. The ordinary germs of putrefaction produce alkaloids differing in chemical, physiological, and poisonous properties when they are decomposing different materials, as fish, cheese, muscle, and brain. Is it not altogether probable, then, that the typhoid bacillus will produce different ptomaines according to the composition of the food material in the intestinal tract? In a certain form of nitrogenous food it may produce a ptomaine the characteristic symptom of which is fever; in another kind, a ptomaine which produces profound nervous symptoms.

It was not my belief then, nor is it now, that all the symptoms of typhoid fever are produced by ptomaines formed in the intestinal canal, since these poisonous bodies are undoubtedly produced in all parts of the body where the bacilli find a lodgement and multiply. It is also probable that certain symptoms may be due to a local irritating effect of the ptomaines on the part in which they are produced. While this is probably true, it is, nevertheless, a belief supported by much clinical evidence that the intestinal canal is the great manufactory and storehouse for these poisons, and that most of the constitutional symptoms throughout the disease are due to their absorption from this source.

Shortly after this discussion I began an experimental study of these questions, hoping to find physiological differences in typhoid ptomaines produced in various food-stuffs, and in that way to throw some tight on the dietetic management of the disease.

In the following experiments I injected into a rabbit's stomach the whole culture containing the

[1] Read before the Cincinnati Academy of Medicine, September 30, 1889. I am indebted to Drs. A. R. Chapin, Otis Cameron, and Leonard Freeman for assistance in this work.

[2] See Cincinnati Lancet and Clinic, December 8, 1888.

active bacilli as well as the products of their growth, because I feared that in attempting the destruction of the germs by heat or otherwise I might also destroy or change the character of their ptomaines. This course was decided upon because it was my belief that rabbits were not susceptible to typhoid fever, and for this reason I concluded that the introduction of the typhoid bacilli could have no appreciable effect on the symptoms, and that the result would, therefore, be either directly or indirectly due to the chemical products introduced with the culture. These experiments are, I think, of some interest in the direction anticipated, but their chief value lies in the fact that one of the rabbits died from typhoid fever, and not from poisoning by the ptomaines introduced into its stomach.

The bacilli used in these experiments were from the stock cultures of the bacteriological laboratory of the Medical College of Ohio, and were from two different sources.

One-half the cultures used were descended from a culture received from Johns Hopkins University six months before. The other half were descendants from a culture made one year before, by Dr. Otis Cameron, from the spleen of a man who died from typhoid fever in the Cincinnati Hospital. The culture materials used were:

1. Peptonized milk.

2. Peptonized beef. This was made by mashing into a fine pulp the coagulate resulting from making beef-tea, adding it to the tea and peptonizing the whole.

3. Peptonized brain, made in same manner as the beef.

4. Bouillon and beef peptonoids.

These materials were put in test-tubes and sterilized in the ordinary way. Only tubes which more than three weeks' time had proved to be sterile were used. After inoculation these tubes were placed in a crate, wrapped in paper to exclude the light, and kept in a temperature of 94° to 98° F. My object was to furnish conditions as nearly resembling those found in the intestinal tract as possible.

The rabbits were inoculated as follows: From sixty to eighty minims of tincture of opium were injected into the peritoneal cavity. As soon as the rabbit became drowsy from the opium, four drachms of a five per cent. solution of bicarbonate of soda were injected through a stomach-tube into the rabbit's stomach, and in the same manner, directly afterward, the contents of a typhoid culture tube were thrown into the stomach. The rabbits were then placed in separate cages, and given plenty of cabbage and moist bread.

The purity of the cultures used was tested in each instance, by inoculating potatoes, just prior to their use. In this manner it was learned that all the cultures used were pure typhoid.

The histories are arranged not in the order in which the rabbits were inoculated, but for convenience of reference, according to the character of the culture material.

The average normal temperature of the rabbits experimented upon was 101° F.

No. 1.—Age ten weeks. Inoculated July 31, 1889, with a pure culture in bouillon and beef peptonoids three and a half months old. Germs descended from spleen culture. August 1st, stupid; temp. 103°. 2d, very dull; temp. 102°. 3d, very dull; temp. 102°—died during the night. Post-mortem showed no cause of death; small intestine deeply injected.

No. 2.—Age ten weeks. Inoculated July 31, 1889, with a pure culture in bouillon and beef peptonoids three and a half months old. Germs descended from spleen culture. August 1st, temp. 102.4°; not active. 2d, dull; temp. 102.4°. 3d, temp. 102°; very stupid. 4th, died this morning. Post-mortem showed no cause of death; small intestine deeply injected.

No. 3.—Age twelve weeks. Inoculated July 31, 1889, with a pure culture in bouillon and beef peptonoids three and a half months old. Germs descended from spleen culture. August 1st, temp. 102.8°; not active. 2d, temp. 102.6°; dull. 3d, temp. 102.6°; dull. 4th, temp. 102.2°; very dull. 5th, died last night. Post-mortem showed no cause of death; small intestine deeply injected.

No. 4.—Age twelve weeks. Inoculated July 31, 1889, with a pure culture in bouillon and beef peptonoids three and a half months old. Germs descended from culture from Johns Hopkins University. August 1st, temp. 102.8°; dull. 2d, 102.4°; dull. 3d, 102.8°; dull. 4th, temp. 102.6°; dull. 5th, temp. 102.4°; not active. 6th, no notes taken. 7th, temp. 103°; active. 8th, temp. 99.8°; diarrhœa. 9th, temp. 99.6°; active, profuse diarrhœa. 11th, temp. 96°; profuse diarrhœa, much emaciated, very weak. 12th, temp. 95.6°; very weak and stupid, appetite good all the time; diarrhœa continues. 13th, died this morning. Post-mortem: great emaciation; no evidence of disease, except in small intestine, which was deeply injected. This injection was especially marked in the ileum, about Peyer's glands. Four small follicular ulcers were found in the ileum opposite the mesenteric attachment, while deeply injected bloodvessels radiated from these ulcers.

These cases were treated exactly alike. Each one was inoculated with the same quantity of pure culture three and a half months old in bouillon to which beef peptonoids had been added. A glance will show that the clinical histories of these rabbits correspond very closely. All of them had a slight increase in temperature, and were dull and stupid from the beginning. One lived three, one three and a half, one four, and one twelve days. In the rabbit that lived twelve days the stupor disappeared on the fifth day, and the temperature fell below normal on the eighth day, and remained so until death. That the symptoms in this group of cases

were not due to the opium injected, is, I think, quite evident from a comparison of these cases with those related below. It seems, therefore, a rational conclusion that the fever and the nervous symptom of stupor, coming on immediately, were produced by ptomaines formed in the beef peptonoids previous to the introduction of the cultures into the stomachs of the rabbits. We may at least claim that the above histories *indicate* that typhoid bacilli, when grown in beef peptonoids, will produce ptomaines capable of producing fever and profound nervous symptoms.

No. 5.—Age six weeks. Inoculated March 24, 1889, with a pure culture in peptonized brain two months old. Germs descended from culture from Johns Hopkins University. March 25th and 26th, temp. not taken; quite dull, eats little. 27th, temp. 98.8°. 28th, temp. 99.4°. 29th, temp. 96.2°. 30th, temp. 97°. 31st, died last night. This rabbit was dull and stupid all the time, and ate very little. Post-mortem: great emaciation; bladder distended. The small intestine, and especially the ileum, was hyperæmic.

No. 6.—Age six weeks. Inoculated March 24, 1889, with a pure culture in peptonized brain two months old. Germs descended from spleen culture. March 25th and 26th, temp. not taken; stupid, no appetite. 27th, temp. 96.2°; very dull, eats nothing. 28th, temp. 99.8°; dull. 29th, temp. 98°; dull. 30th, temp. 99.2°; no appetite. 31st, temp. 99.2°. April 1st, temp. 96.8°; dull, eats better. 2d, temp. 97.8°. 3d, dead. Post-mortem: great emaciation; bladder distended; small intestine injected. In the ileum three small follicular ulcers were found; spleen, liver, and kidneys were apparently normal. A plate culture was made from the spleen, but no typhoid bacilli were found.

No. 7.—Age six weeks. Inoculated March 24, 1889, with a pure culture in peptonized beef two months old. Germs descended from spleen culture. March 25th and 26th, temp. not taken; dull; eats little. 27th, temp. 99.6°; dull; no appetite. 28th, temp. 98°; dull. 29th, temp. 96°; dull; eats better. 30th, temp. 96°; stupid. 31st, dead. Post-mortem: much emaciated; bladder distended; ileum hyperæmic, especially about the large Peyer's patch near the cæcum and about another Peyer's patch six inches above.

No. 8.—Age six weeks. Inoculated March 24, 1889, with a culture two months old in peptonized beef. Germs descended from culture from Johns Hopkins University. March 25th and 26th, temp. not taken; dull. 27th, temp. 99.4°. 28th, temp. 101.7°; active; eats well. 29th, temp. 98.4°; active. 30th, temp. 99.5°; active. 31st, temp. 98.4°; eats well; not so active. April 1st, temp. 99.5°; rather dull. 2d, temp. 97.2°; dull. 3d, dead. Post-mortem: bladder distended; marked hyperæmia throughout ileum.

It will be noticed that there is a marked similarity in the clinical histories of these cases; there being no marked difference in the symptoms of those treated with a culture in peptonized brain and those treated with a culture in peptonized beef. All were quite stupid from the first day and all had subnormal temperatures on the third day, this being the first day upon which their temperatures were taken. Two of these rabbits lived seven and two nine days.

Im comparing the clinical histories of groups 1 and 2, the following points are worthy of note:

1st. The nervous symptom of stupor was the same in both groups.

2d. The temperature on the third day in group 1 was increased, while in group 2 it was subnormal.

3d. The rabbits in group 1, with a single exception, died much sooner than those in group 2.

From these facts we may infer:

1st. That typhoid ptomaines may be formed in peptonized beef and brain which are capable of producing just as profound nervous symptoms as those formed in the beef peptonoids of the shops.

2d. That the former produce no fever, while the latter produce fever.

3d. That the beef and brain ptomaines are less virulent than the peptonoid ptomaines.

It must also be borne in mind that there may be a possible error in the above inference dependent on the fact that the cultures used in the two groups differed in age. Those used in group No. 1 were three and a half months old, while those used in group No. 2 were two months old. This may account for the difference in severity but probably does not account for the difference in character of the symptoms produced.

No. 9.—Age twelve weeks. Inoculated March 24, 1889, with a pure culture two months old in peptonized milk. March 25th and 26th, apparently well; temp. not taken. 27th, temp. 99°; active; eats ravenously. 28th, temp. 100.2°; eats. 29th, temp. 96.4°; not active. 30th, temp. 98°; dull. 31st, dead.

No. 10.—Age twelve weeks. Inoculated March 24, 1889, with a pure culture two months old in peptonized milk. Germs descended from spleen culture. March 25th and 26th, temp. not taken; apparently well. 27th, temp. 102°; very active; eats well. 28th, temp. 101.6°; active; out of box; eats well. 29th, temp. 97.2°; not active. 30th, temp. 99.4°; active; good appetite. 31st, temp. 95.4°; not active. April 1st, temp. 99°; active; good appetite. 2d, temp. 98.6°; diarrhœa; not active; eats well. 3d, temp. 96.4°; diarrhœa; eats well; dulness and stupidity apparently due to weakness. 4th, temp. 95°; very weak and stupid; diarrhœa. 5th, temp. 95°; cannot stand alone. 6th, died this morning. Post-mortem[1] (present Drs. Chapin, Cameron, and Freeman and laboratory class, twelve hours after death.): Extreme emacia-

[1] Post mortem and bacteriological work done in the bacteriological laboratory of the Medical College of Ohio.

tion. Lungs and liver showed no evidence of disease; spleen normal in size; kidneys enlarged and congested. The small intestine was carefully removed and thoroughly washed by allowing a stream of water to run through it; when distended with water and held before the gaslight points of pronounced hyperæmia were seen at intervals of a few inches throughout its length. These points were more numerous and better marked in the ileum than elsewhere, and marked the location of follicular ulcers and of Peyer's patches.

Section of the gut showed that Peyer's glands throughout the ileum projected abnormally above the surface of the mucous membrane, and were much injected, one patch, about six inches from the cæcum, was slightly broken down in its centre, apparently a beginning ulceration. Some twelve or fifteen ulcers were found in the small intestine. They were chiefly located in the ileum. These ulcers were clearly defined, circular, deeply injected, about one sixth to one-eighth of an inch in diameter, and situated opposite the mesenteric attachment.

From a plate culture made from the spleen there was obtained a culture of bacillus, which in drop culture and stained cover-glass preparation was morphologically identical with the typhoid bacillus. This bacillus on potato gave a moist colorless growth, covering the whole surface of the potato.

Sections of kidney and spleen were stained and found to contain bacilli which corresponded in size and shape to the typhoid bacilli.

These experiments were begun for the sole purpose of observing the physiological effects of typhoid ptomaines formed in various food-stuffs, and not at all with the idea of producing typhoid fever in animals experimented upon. For this reason a biological examination of the organs of the dead animals was not thought of or attempted till the clinical history of rabbit No. 10 began to indicate that it was suffering from a progressive disease and not alone from the effects of the chemical poison which had been introduced into its stomach.

The rabbit (No. 10) did not show the slightest evidence of ptomaine poisoning. It remained apparently well for four days—during this time being quite active, eating well, and having a normal temperature. On the fifth day it showed evidence of sickness and from this time grew gradually weaker, dying on the tenth day of its sickness and fourteen days after inoculation. The symptoms were: subnormal temperature, gradual emaciation, diarrhœa, failing strength, and dulness. When this clinical history is taken in connection with the post-mortem lesions and biological examination it seems reasonable to conclude that this rabbit died from typhoid fever. The only way to avoid this conclusion is to argue an error in the technique.

In the study of the physiological action of typhoid ptomaines introduced with the cultures, it is quite evident that the early symptoms are all-important, since the symptoms which occurred after the third or fourth day could not have been due to the direct action of chemical poisons introduced with the culture. In the comparison, therefore, of group 3 with groups 1 and 2, it will be necessary to consider only the early symptoms.

The rabbits Nos. 9 and 10, composing group 3, were inoculated wirh cultures in milk. These two histories are, like those in the other groups, strikingly similar. They were apparently well till the third or fourth day, not showing the slightest evidence of ptomaine poisoning.

In comparing the clinical histories of groups No. 1 and 2, with those of group No. 3, the following points are worthy of note:

The stupor, which is the most prominent symptom in groups 1 and 2, is entirely absent in group 3. The fever in group 1 was increased, in group 2 the temperature was subnormal, and in group 3 it was normal. In short, all the early symptoms which characterized the cases in groups 1 and 2 were absent in group 3. These facts would indicate that the typhoid bacillus, when grown in milk, does not produce ptomaines capable of producing either fever or nervous symptoms, and that if the ptomaines thus formed are at all poisonous, they are much less so than those formed in beef peptonoids.

Now, in conclusion, let us note that there are three important propositions to which these histories bear witness:

1st. The bacillus typhosus of Koch and Eberth is the cause of typhoid fever.

2d. The physiological and poisonous properties of the ptomaines formed by this bacillus will depend in great part on the character of the food material in which it is growing.

3d. Milk is the best diet in typhoid fever, since the ptomaines produced in it do not cause either fever or nervous symptoms.

OBSERVATIONS ON INTRA-CRANIAL HEMORRHAGE AND SOFTENING.[1]

BY JAMES HENDRIE LLOYD, M.D.,
VISITING PHYSICIAN TO THE NERVOUS AND INSANE DEPARTMENT OF THE PHILADELPHIA HOSPITAL.

THE very lively interest manifested during the last few years in the pathology and surgery of the brain, has been especially sustained by the success obtained not infrequently in locating lesions in very narrow areas. Much of this success has been due to the work of the experimental physiologists, but a certain proportion of it is also due to accurate clinical observations with subsequent autopsies, which have utilized the experiments which disease has made in the brain, and have often either confirmed the results or even guided the researches of

[1] Read by title at the Annual Meeting of the American Neurological Association, Long Branch, June, 1889.

the laboratories. In these pathological studies comparatively little use has been made of the various lesions made by hemorrhages from and emboli of the encephalic bloodvessels. I say *comparatively* little, considering the large relative number of these cases. The reasons for this are probably several in number. The so-called apoplectic stroke when once declared and recognized does not appear to have further interest for the majority than is involved in the prognosis and duration of the case. Fine points of diagnosis and localization appear superfluous in the case of a man who is, perhaps, stertorous, or who, even if he survives, will probably be hopelessly hemiplegic, even aphasic, for the rest of his life. Again, there is a sameness about the vast majority of these cases which has probably inspired the feeling that there is not much new to be observed in any of them. The drowsy, hemiplegic patient, with distorted face and tongue and conjugate deviation of the eyes and head, presents a clinical picture recognized by all, any slight variations from which are not seen or thought noteworthy. Finally, hemorrhages into the substance of the brain are usually not good localizing lesions; they are apt to commit extensive ravages and to involve much contiguous territory by pressure, so that they often present symptoms which are exceedingly difficult to interpret for even the most expert diagnostician. This is not true to the same extent of emboli, which when lodged in small vessels sometimes give very exact indications of their whereabouts; nor is it always true to the same extent of traumatic meningeal hemorrhages, which may sometimes be successfully localized. With the latter I shall not deal in this paper.

In an experience during the last few months which has been unusually rich in cases of intra-cranial endarteritis, I have endeavored, as far as possible, to apply the principles of localization in the diagnosis, and to observe accurately in the autopsy the position of the lesion. I cannot claim much success; but I have been struck with the fact that when studied attentively this series of sixteen cases presents no two instances very nearly alike; that, in fact, there is much more variety and hence much more of clinical and pathological interest than any person would be led to expect in a series of successive cases happening to one observer. This interest, however, is not altogether in the localizing symptoms, but in some other clinical phenomena, as may be seen.

The enthusiasm which has been excited by recent work in cerebral surgery is, perhaps, shown in no more remarkable way than by the guarded suggestion which some have thrown out, that some cases of cerebral hemorrhage may yet be subject to operative interference. This appears as yet to be little more than a surgical dream, so far as it concerns hemorrhage due to diseased bloodvessels. The damage to the brain-tissue, the deep seat of the lesion, and the advanced deterioration of other vessels than the one which has ruptured, are a few of the conditions which cause this suggestion to appear Utopian in the extreme. It is not my purpose to discuss it at length here. Tapping and drainage of the lateral ventricles, as a mere surgical feat, has been proved to be practicable; but as a successful remedial measure in a brain whose vascular system is in advanced degeneration it must still be of very doubtful propriety. Multiple hemorrhages in the brain are not uncommon; several are recorded in this series of cases, and serve to emphasize the danger and hopelessness of evacuating a blood collection which may be one of several, or the precursor of others.

Extensive Disease of the Intra-cranial Bloodvessel System.

A case of hemorrhage into the pons, which has already been reported in detail elsewhere,[1] was an illustration of the fact just referred to.

The woman had had two intra-cranial hemorrhages, an old one into the lenticular nucleus with the usual hemiplegia, and a recent fatal one into the pons. This case was notable also for the facts that (1) the paralysis was not crossed, *i. e.*, the face and limbs were paralyzed on the same side, owing to the hemorrhage being in the upper part of the pons above the decussation of the facial nerve fibres; (2) to the absence of the contracted pupils and slow respiration which sometimes, in pons hemorrhage, simulate opium poisoning; (3) the late appearance of third nerve involvement, causing double ptosis and external deviation of the eyes; and finally (4) the strictly localized convulsive phenomena in the right arm which the patient exhibited a few days before she died, and which appeared exactly like an epileptoid seizure of focal cortical origin.

In reference to this last observation it may be stated that some have claimed that localized clonic seizures are not always of cortical origin, but may be caused by lesions at a lower level, as in the pons or medulla. This is of importance in diagnosis, because much stress is usually laid upon such local movements for fixing cortical lesions. In the above case the fit was in the sound (unparalyzed) arm, and nothing was observed post-mortem to explain it but the lesion in the pons.

It is common enough to regard a sudden hemiplegia as the first and often the only important and characteristic symptom or result of intra-cranial endarteritis. Nothing could be a greater error than this. Hemiplegia results when a large clot is thrown out and presses upon the descending motor fibres

[1] Reported by Dr. W. R. Wilson, in the University Magazine for June, 1889.

or when large vessels supplying the motor region of the cortex are plugged with a thrombus or embolus.

These accidents (except in the cases of emboli from distant parts) result from precedent disease of the bloodvessels. This disease of the bloodvessels is usually widely extended, involving many other arteries than the one which has ruptured—many arteries even outside of the head. Thus vessels accessible to pressure, as the radials and temporals, are indices of this wide degeneration, and are often found very firm, resisting, and almost like quills. At the base of the brain this arterial decay is often very extensive, and those persons who have examined many brains of hemiplegics must often have been impressed with the truth of the statement that a man's life is only as long as the life of his bloodvessels. It must also appear to them in the highest degree probable, that a brain which has had to depend, perhaps for years, for its nourishment upon such stiff and narrowed tubes cannot have been always in the best working condition, and that it must frequently, even long before the final and fatal break, have given evidence of the progressive decay which was undermining it. These *prehemiplegic* symptoms have not been recognized as fully as they ought to be. They are difficult to identify, and are still more difficult to verify. These symptoms are (1) mental, as loss of memory, sluggish intellectual processes, and inability to concentrate the thoughts: the signs of advancing senility are, no doubt, often due primarily to this cause. (2) Motor, as vertiginous attacks, possibly rarely convulsive phenomena, and conditions of more or less transient paresis. (3) Sensory symptoms, often very characteristic, as numbness or paræsthesia of a part or the whole of a limb, sometimes quite persistent. As this arterial degeneration not unfrequently accompanies kidney disease, it is a question whether some of the so-called uræmic brain-states may not be due to this mechanical cause.

A man prematurely aged at sixty, and whose appearance was that of eighty, had pipe-stem arteries at the wrists, arcus senilis, and the alligator-like skin of advanced old age. His urine was slightly albuminous and contained a very few casts: there was no œdema. He was very dull in mind, sitting about in a dazed condition, doing nothing, and responding very slowly and inadequately to questions. There was no paralysis. But when he slept or even dozed his head and both eyes deviated far to the right, and his right face also was well pulled over, leaving the left flat and smooth. His left arm was less resistant than his right; in fact, he was, while sleeping, in a partial left hemiparesis. When he awoke, this condition gradually passed away. He sank into a comatose state and died. An autopsy was refused. I believe this patient had extensive endarteritis at the base of the brain, causing partial brain starvation, especially in parts of the right hemisphere, but not advancing to hemorrhage. When he slept the blood-supply was still more diminished, and was especially cut off in the vessels on the right side.

Another patient, aged fifty-six, syphilitic, had a series of intra-cranial hemorrhages within a few months. His first symptom was a gradual hemiparesis. He did not have with these first symptoms any sudden "stroke" or loss of consciousness, but his trouble advanced to complete hemiplegia, with secondary contracture in the limbs. His last and fatal hemorrhage was in another part of his brain, and was more rapid in its effects. He had a violent convulsion with a quick-succeeding coma, and died in a few hours. After this last hemorrhage he had violent muscular contractions, sometimes called post-hemiplegic chorea, which will be referred to again. The autopsy revealed an old hemorrhagic cavity, containing brown fluid, well encapsuled, in the right external capsule and lenticular nucleus. A more recent subarachnoid hemorrhage was found over the occipital lobe on the right side, the brain substance being ploughed up by it in one spot. A similar but slight subarachnoid hemorrhage was found on the right hemisphere of the cerebellum. In addition to all this, the *left* hemisphere contained a great mass of black, tarry blood-clots in a cavity which had been made in the region of the lenticular nucleus, but which had extended far into the interior of the brain, and had broken through into the lateral ventricles. The vessels at the base of the brain were hard and quill-like, some of them containing white fibrinous masses. The gradual onset of the first paretic symptoms is very characteristic of syphilitic cases, and is explained by the gradual occlusion of the vessels. In this case, however, the lesions all appeared due to hemorrhage.

It is notable that this man's brain contained ruptured vessels on both sides. If the last hemorrhage had not been so extensive as to destroy life, he would have been one of those rare cases of *double* hemiplegia which some authors have described. The following case also was a near approach to this condition:

H. F., aged forty, had an old left-sided hemiplegia, with secondary contractures, of nine years' standing. His hemiplegia came on very suddenly without loss of consciousness. He had recovered some power in his left leg and could walk, but his left arm remained very weak. For some months before his death he had been distinctly losing power in his right leg, while his right arm remained normal. The autopsy revealed extensive degeneration of the arterial system at the base of the brain and apoplectic cysts in both lenticular nuclei, which were pigmented and softened—the right side more affected than the left. The intra-cranial arteries had undergone degeneration and rupture on both sides. The patient came the nearest I have yet seen to a double hemiplegia.

Local Asphyxia in the Distribution of Vessels.

The brain is, no doubt, often deprived of its proper blood-supply, and, hence, impaired in its functions, by vascular disease which, however, has not yet produced softening or necrosis of brain-tissue. Thus occasionally a patch, or area, of great paleness is found in the cortex in marked contrast with surrounding tissue.

In the case of a German, aged seventy-two, who died of pneumonia, the comatose condition in which he was when first seen was diagnosticated as due to intra-cranial vascular disease, especially as he had right lateral deviation of the head and eyes, and the left arm and leg were entirely flaccid and non-resistant. The autopsy showed the cerebral cortex supplied by the left anterior cerebral artery to be very pale and bloodless in contrast with the rest of the cortex of both hemispheres. The area of distribution of the anterior cerebral artery was thus beautifully mapped out. This was evidently recent, and was not attended by any necrosis of brain-tissue, nor had there been any symptoms during life to be attributed to it, except that the man's dull mental state was doubtless due to brain-starvation. No embolus was found in the main trunk of the vessel, but all the vessels at the base were much diseased and narrowed, and must have curtailed very much the blood-supply to the brain. A small hemorrhagic cyst, containing brown fluid, was found in the right optic thalamus bordering on the motor tract behind the knee of the internal capsule. It was in exact position to make pressure on the motor tract, but had not destroyed it.

Lesions of the optic thalamus are not common. They are apt to cause anæsthesia by pressure upon the posterior part of the internal capsule, as well as interesting eye-symptoms, such as blindness of the halves of both eyes on the side of the lesion (homonymous hemianopsia).

A Case of Homonymous Hemianopsia.

The occurrence of this condition as an isolated symptom—*i. e.*, without any paralytic or other anæsthetic symptoms—is rare. I have seen it in only one patient.

This man was in perfect health when one morning he was seized with giddiness and a strange feeling in his left leg. He did not lose consciousness or power. Some days afterward he discovered that he could not see to the left. This discovery was made by his almost meeting with several accidents in the street. When examined in the hospital and put to strict tests, nothing could be discovered wrong with him except a complete lateral, or homonymous, hemianopsia—that is to say, the *right* half of each eye was blind; and, consequently, he could not see in the *left* fields of vision.

This symptom is always caused by a lesion behind the chiasm, and is usually attended with other symptoms, depending on the nature and seat of the lesion. If the lesion is in the optic thalamus, pressing upon the capsule, there will likely be hemianæsthesia and perhaps also hemiplegia. The sensory fibres pass down through the capsule behind the motor. There might be a lesion in this region small enough to pick out just the visual fibres, causing no other sensory and no paretic symptoms, but such a thing is extremely improbable. The most probable region for the lesion in this case would be in that part of the cortex, or underlying white substance, which presides over vision—which receives the fibres direct from the retina. That region is probably the cuneus and the end of the occipital lobe. The lesion which could cause such results as in our patient, without other symptoms, and persisting at the end of three months, is an embolus; and while it is hazardous to express a positive opinion on such a fine point, I think this was probably the cause. The occipital lobe affected in our patient was, of course, the right.

Lesions of the Cerebellum.

The relation of lesions of the cerebellum to hemiplegic and other paralytic symptoms is not uniform or always very clear. When only one hemisphere is involved there may be no hemiplegia, or when hemiplegia occurs it is observed sometimes on the side of the lesion and sometimes on the other. Downward pressure on the motor tract in pons or medulla seems to be the most reasonable explanation, but why sensation is not always equally impaired does not appear. It will depend upon whether the downward pressure upon the motor fibres is above or below the decussation in the medulla which side is paralyzed.

In a case of large cyst of the right hemisphere of the cerebellum the hemiplegia was on the same side. This man died of typhoid fever. He had had loss of power in his right arm and leg, with a fine tremor, for three years. This had come on him with the sudden stroke of the usual apoplectic seizure. He had no anæsthesia. The case had been considered in life one of the common instances of lenticular hemorrhage. It was remembered, however, at his autopsy that he had not had paralysis of the face or tongue. The lesion found was a large cyst which occupied the whole upper third of the right hemisphere of the cerebellum. It was in the part supplied by the anterior, or superior, cerebellar artery. This vessel, however, was not occluded or diseased, as far as could be made out. The cyst may have been the result of an old hemorrhage.

Unusual Lesions of the Brain not Accounting for Hemiplegia.

The brain with degenerated vessels sometimes exhibits symptoms which cannot be explained by the *gross* lesions found post-mortem. The most common of these symptoms in my observation has been hemiplegia, which cannot always be ascribed

to the anatomical changes most apparent to the naked eye. This leads to confusion and error sometimes in applying the principles of localization in such cases.

An old woman was admitted in a semi-conscious state with hemiplegia, including the face. The case could not be distinguished from the ordinary. The autopsy revealed arteries at the base extensively diseased, and the brain was very full of venous blood. This venous congestion can probably result from the arterial obstruction. The motor regions were not different from the rest of the organ, but the cortex of the left occipital lobe was much softened, being yellow and creamy. The hemiplegia could not have been the result of the diseased occipital lobe, but it was no doubt the expression of brain starvation, caused by an impeded arterial supply, and probably appearing worse because of the patient's general dull condition. It was, hence, a coincident, not a result, of the necrosis, both being due to a common cause. The disease of the occipital lobe no doubt gave symptoms of its own, among which was probably a lateral hemianopsia, but the patient was too dull for this to be determined. So, too, of another case, in which a quite large area of softening was found in the temporal lobe. This woman had not only hemiplegia, but a rare form of post-hemiplegic motor disorder. The movement consisted of rapidly repeated shocks, very much like those produced by a rapidly interrupted faradic current. They did not resemble choreic movements, and could more properly be called unilateral *myoclonus*. The vessels of the brain were found diseased. The patch of softening involved especially the upper and middle convolutions, parts supplied by the middle cerebral artery; and the branch of that artery going to this region was found occluded with an atheromatous patch. As the middle cerebral artery supplies largely the motor regions, it is possible it was sufficiently diseased to cut off enough blood to impair, but not soften, these regions.

Lesions of the temporal lobe are of especial interest as indicating the cortical area for hearing, but this sense cannot be tested in a patient only partly conscious.

MENINGEAL HEMORRHAGES: SO-CALLED PACHYMENINGITIS HEMORRHAGICA.

Much discussion has been occasioned by the organized blood-clots, usually adherent to the dura mater, sometimes found post-mortem. The question has been, whether these new formations have originated in an inflammation of the dura mater (or other membrane), or whether they are of hemorrhagic origin. Some of these cases, at least, are the results of hemorrhages, which in turn are caused by degenerated bloodvessels, just as the hemorrhages so frequently found in the lenticular nucleus and other interior parts of the brain are produced. I have seen three cases of meningeal hemorrhage in the series of sixteen cases upon which this paper is founded. These were large bleedings, and all proved rapidly fatal, and they were all in brains whose arterial system had undergone, along with other tissue, extensive degeneration. They had one symptom in common—convulsion. If any one of these blood-clots had been very small and thin, it might have been compatible with life; it would then have become organized and adherent to the dura. One of these cases, in fact, did exhibit such a condition to a slight extent, as though the result of a former small hemorrhage. Another of these cases has already been reported;[1] in it a large tumor grew from the under surface of the temporal lobe. The skull had undergone remarkable softening and thickening, and the membranes were degenerated. The hemorrhage occurred on the vault of the hemisphere, remote from the tumor. In the third case—already reported in this paper—the hemorrhage was sub-arachnoid, and one only of several.

THE DIAGNOSIS OF OBSCURE CASES OF CEREBRAL HEMORRHAGE.

It has happened recently to the writer to be called to two fatal cases in which the diagnosis was obscure, but in which intra-cranial hemorrhage was believed to be the cause. In both cases an autopsy was refused.

These patients were women in middle life. They were seized during sleep, and both soon became so profoundly comatose that it was impossible to determine whether or no a hemiplegia was present. One had external strabismus and dilated pupil of the left eye, which would indicate possibly a lesion—as hemorrhage—of the left crus, involving the third nerve.

I refer to these cases because they are especially difficult to diagnosticate from uræmic coma, and this difficulty is, of course, increased if the patient, as in the case of one of these, has albumin and casts in the urine. The presence of albumin and casts, however, does not prove that the patient has uræmic coma, and what is equally important, it does not contraindicate cerebral hemorrhage. In both of these patients there was a total absence of precedent symptoms of kidney disease. In the one whose urine was albuminous the excretion was free, and treatment directed to a possible uræmic element did no good. The temperature was above normal in this patient, which contraindicates uræmia. The duration of these cases, almost a week in both, is also against uræmia.

DR. ORVILLE HORWITZ has been appointed Demonstrator of Surgery in the Jefferson Medical College to succeed Dr. J. Ewing Mears, who has resigned after fifteen years' service.

---

[1] Philadelphia Neurological Society Transactions. Medical and Surgical Reporter, July, 1889

HOSPITAL NOTES.

TÆNIA MEDIA-CANELLATA.

Abstract of Original Lecture Delivered at the Hospital of the University of Pennsylvania, October 10, 1889.

BY JAMES TYSON, M.D.,
PROFESSOR OF CLINICAL MEDICINE.

DR. TYSON showed the class a specimen of an entire tænia media-canellata, or beef tape-worm, removed by treatment from a patient in the University Hospital. He called attention to the fact that this form of the parasite is the one most commonly seen in this country; that it generally has a length of about four yards, with a small head possessing neither snout nor hooklets, but flattened in front and provided with four prominent and powerful suckers. Attention was, also, called to the fact that two other varieties of tape-worm are frequently found in the alimentary canal of man, and are known as the tænia solium, or the pork worm, and the bothriocephalus latus, or the fish worm, as it is sometimes called. The former is very common in Germany, and is sometimes seen in this country; but the latter is much more rare, and is only seen in those countries where the people eat a large number of fish. The distinction between the tænia solium and the tænia media-canellata is marked by the former possessing, in addition to the suckers, a disk of hooklets, by which it attaches itself to the walls of the bowel, and in consequence this species of worm is the most difficult to dislodge. The bothriocephalus latus has an oval head with a slit on each side, and possesses neither hooklets nor suckers.

The treatment in the case which Dr. Tyson showed the class consisted in fasting for twenty-four hours, and in the administration at the end of twelve hours of a saline purge. On the next morning at seven o'clock two drachms of the ethereal extract of male fern were administered, and repeated in two hours. On the same afternoon another saline was given, and the worm was discharged entire.

The lecturer pointed out that failure often resulted because the treatment previous to the final purge had been imperfect. He also recommended very highly kousso in the treatment of tape-worm, and stated that an equally efficient remedy is pomegranate or its derivative, pelleterine. The kousso should be given in an infusion made of four ounces to the pint of water, all of which should be taken. Pelleterine is to be given in the dose of from two to three grains. When pomegranate itself is used, an infusion of the strength of half an ounce to the pint should be employed.

MEDICAL PROGRESS.

Scarlatina and the Puerperal State.—Can a physician who is attending cases of scarlatina take charge, at the same time, of women in labor; and if he does, are the lives of his patients endangered? This is a question of great interest to every general practitioner, since he cannot always, even if he uses the utmost care, avoid contact with scarlatina while in attendance upon labor cases. The various opinions held by medical men upon this important subject are well expressed in the discussion of a series of papers read by DR. BOXALL (*Trans. of London Obstet. Society*).

The opinion has been held by many physicians that scarlatina is especially dangerous to parturients, producing in them a very dangerous form of puerperal fever. Others, however, claim that scarlatina can produce in the parturient only scarlatina, and that the danger to the patient is little, if at all, greater than if she had not been pregnant. Do the scarlatiniform rashes, which appear upon parturient patients, indicate the presence of the scarlatinal poison, or are they simply unusual indications of non-scarlatinal septicæmia? The complete solution of this problem must evidently await more exact knowledge of the nature and cause of scarlatina, and of the peculiar characteristics of the lying-in diseases which are now grouped under the general title of "Puerperal Fever," or "Puerperal Septicæmia." In the discussion, however, some interesting points were developed. It was insisted upon, and with reason, that disinfection against scarlatina before attendance upon a case of labor, ought to embrace something more than routine cleansing of the hands—ought to include as thorough disinfection as possible of the clothing of the practitioner.

The statement was made that, while scarlatina breeds only scarlatina, yet scarlatina *plus* septic matter breeds scarlatina and septicæmia. Therefore, proper disinfection of the person and clothing of the non-parturient patient will prevent, if the physician is free from septic matter, the production of septicæmia in the parturient, although she may have scarlatina.

The suggestion was also made, that septic symptoms occurring in a patient who has acquired scarlatina during labor, may arise from decomposition of her own lochia, or from the absorption of other septic matter by the enfeebled tissues of her genital tract. If this be so, careful irrigation and cleansing of the genital canal whenever decomposition of the discharges occurs, and under other proper circumstances, would probably ward off sepsis, and limit the disease to scarlatinal fever.

One fact, which forcibly suggests that scarlatina does not of itself produce puerperal septicæmia, is, that in certain cited epidemics of scarlatina, of a very malignant form, there has been no increase of puerperal fever.

If it is true that scarlatina breeds only scarlatina, and that septic symptoms in its course, arise from a second infection of the parturient with septic matter, then it is probable that the physician may attend scarlatinal and labor cases at the same time, with comparative safety, if he practises and enforces the well-known laws of asepsis and antisepsis. Further knowledge and experience are needed before these important points can be decided.

Oxygen Inhalation.—The opinions held among medical men concerning the therapeutic value of inhalations of pure oxygen, are so various that any careful observations upon the subject are worthy of attention. In the *Practitioner* (August, 1889) DR. THOMPSON discusses the subject from a theoretical point of view, and gives also the result of experiments upon animals and of observations upon patients.

From experiment, and from consideration of the laws of physics as they bear upon the absorption of oxygen by the blood, it is quite evident that if an animal in a state of perfect health is made to breathe pure oxygen at the pressure under which this gas exists in the atmos-

phere, but very little more oxygen will be taken into the blood than if it breathed common air. In order to make any considerable amount enter the blood above that which is usually absorbed by it, a degree of pressure is necessary which causes mechanical interference with circulation and respiration.

The old idea that animals cannot live in an atmosphere of pure oxygen is erroneous. As might be expected from the foregoing statements, it is now proven that animals can live for many hours in pure oxygen, under ordinary atmospheric pressure, without any symptoms or appreciable change, provided the CO_2 exhaled and the nitrogenous waste products of the body be removed. The vague and inconstant sensations, experienced by healthy persons who inhale pure oxygen freely, may be due to impurities contained in it.

Practically, Dr. Thompson has found the inhalation of oxygen valuable in many cases. In *anæmia* and *chlorosis* he has derived no decided benefit from it. In *malignant diphtheria*, with rapid respiration, subjective dyspnœa, and cyanosis, relief was afforded only to the subjective dyspnœa, the cyanosis remaining the same, and the patient dying from pulmonary œdema and heart-failure. In a case of *illumination-gas poisoning*, with persistent unconsciousness and subsequent pneumonia, the continuous inhalation of oxygen had no effect whatever, either upon the breathing or upon the cyanosis which occurred during several attacks of pulmonary œdema.

In a case of *malignant endocarditis*, with extensive valvular disease and dilatation, oxygen failed to relieve the dyspnœa, either before or after obstruction occurred in the lungs. In *pneumonia*, with rapid breathing, dyspnœa, and cyanosis, he has often found oxygen of very great value. The dyspnœa may diminish while the cyanosis quickly vanishes, and the respiration becomes slower and more natural. So also in *capillary bronchitis* and *asthma*, especially when it is accompanied by much bronchial secretion. In *uræmic dyspnœa* he has found it of great use. In one such case, with normal lungs and very intense dyspnœa, lasting for three days, each inhalation of oxygen was followed in fifteen minutes by slowing and quieting of the breathing, slight improvement in the cyanosis, and great increase of comfort to the patient. Upon stopping the inhalation the dyspnœa always returned.

A bibliography of the subject is appended to the article.

The Dissemination of Tuberculosis.—The experiments of DR. CORNET, in the Hygienic Institute of Berlin, under the auspices of Professor Koch, have been frequently alluded to in THE NEWS, and are, indeed, so well known by the profession in general as to need no repetition. Being a Bavarian by birth, Cornet some time back sent a copy of his publications to the Bavarian Government, with the request that they test the correctness of his views. Although it was not to be expected that they should undertake an extended inquiry at the dictate of a private individual, the *Medical Press and Circular* of October 2d states they handed the articles to the Upper Board of Health. The referee on this occasion, Professor Bollinger, has decided to enter on an investigation as regards prisons.

It is notorious that a great number of prisoners, nearly one-third, die of phthisis, and Professor Bollinger has determined that they shall not die of phthisis contracted within the prison walls, if Koch's views on the etiology of the disease are correct. For the future, all cells are to be disinfected as thoroughly after occupation by phthisical patients as after cholera or smallpox. Further than this, all prisoners already phthisical, or suspected of being so, are to be removed. All the sputum is to be disposed of in the way recommended by Dr. Cornet.

The Treatment of Lupus by the Application of Ice.—DR. KLAUS HAUSSEN, in the *Centralblatt für Chirurgie*, for September 7th, reports two cases of lupus, one of the lower lip and the other of the chin, both of which had been subjected to various modes of treatment, such as cauterization, the use of the galvano-cautery, scraping, etc. In spite of this treatment healing did not occur, and the disease continued to spread. In both cases the parts affected were most sensitive, and even the application of iodoform powder caused long-continued pain, which the use of cocaine solution was unable to mitigate. Haussen scraped the parts again, and treated the disease by applications of ice. The extreme sensitiveness speedily disappeared, and in the course of a few weeks both cases were entirely cured.

Reduction of Hernia during Coughing.—It is an undoubted fact that coughing will produce or bring down a hernia; it is therefore somewhat surprising to hear that coughing may be useful in the reduction of such a displacement. M. VANDENABEELE, however, has frequently found that herniæ which had resisted attempts at reduction by taxis alone, yielded when the patient was directed to cough during the manual effort of compressing the sac. M. Vandenabeele's observations included both inguinal and femoral herniæ, and were not confined to either sex. He believes that during the act of coughing the hernial ring dilates somewhat, and that if well-directed taxis is employed at the right moment most cases will yield.—*Lancet*, October 5, 1889.

Echophotomy.—PROFESSOR QUINCKE, of Kiel, has been recently devoting himself to a careful scrutiny of producing colors by different sounds. When a trumpet is loudly sounded at the ear of a sensitive patient, he will immediately after define the first color he sees as yellow which he formerly recognized in its proper hue. A vocal sound A will give the impression of black, while the vocal sound O conveys the sensation of red. This phenomenon is analogous to the radiating pain of toothache, the shoulder pain in case of hepatic affections, etc., being peripheral excitement transported to another path on its way to the reflecting centre where it is received as a true impression. This observation may be of considerable value in elucidating many cases of color-blindness or perverted vision.—*Medical Press and Circular*, October 2, 1889.

Colored Spectacles.—DR. KÖNIGSTEIN, of Vienna, while giving directions to his class on the uses and prescribing of spectacles, said that green glasses as a protection against strong rays were worse than useless, and did more harm to a sensitive eye than good, as they allowed the yellow rays to be transmitted and unnecessarily irritated the eye. As a protection against strong rays the blue or

smoked glasses were the only real protection. The blue should be light, as a deep blue color produces a clear violet disk in the centre of the lens which apparently corresponds to the fovea centralis, and by a protracted use of dark blue spectacles the patient may become annoyed by the mosaic work of the fundus of the eye appearing before him. The phenomenon seems to be connected with the pigmentary changes in the macula lutea. —*Medical Press and Circular*, October 2, 1889.

Sulphonal in Night-sweats.—Dr. Boettrich, in the *Medical Press and Circular* of October 2, 1889, relates the case of a lady suffering from profuse night-sweats and sleeplessness. He prescribed seven grains of sulphonal, after which the sweating was quickly arrested. On further investigation he found that the drug in this direction is as powerful as atropine, and free from its toxic effects, whilst its influence in suppressing the perspiration lasts longer.

Treatment of Pruritus.—Norman Porritt, in the *British Medical Journal* of July 27, 1889, recommends the employment of a cone of cacao butter, impregnated with two per cent. of cocaine, in the treatment of pruritus and irritable skin. This is rubbed over the part affected. The warmth of the skin melts off a layer of cacao butter, which forms a soothing emollient shield over the irritable patch. The remedy has been put up in the form of cones, inclosed in boxwood cases with screw tops, something after the manner of menthol cones. In irritable affections of the skin, in cases of insect bite, in pruritus, and various forms of hyperæsthesia, the remedy is worthy of a trial, and its use has distinct advantages over the more usual applications.—*Journal of Cutaneous and Genito-urinary Diseases*, October, 1889.

Intestinal Obstruction.—In the *Archives of Surgery* for July, 1889, Mr. Jonathan Hutchinson details the principles which guide him in the treatment of suspected acute intestinal obstruction, from whatever cause. He believes that in all cases in which obstruction is recognized, whether the symptoms are severe or mild, one of the first measures adopted should be the administration of an anæsthetic, under the full influence of which, intestinal spasm will be relaxed, and the passage of scybalæ, gall-stones, or other impediments favored. While anæsthetized, the patient's abdomen should be carefully examined by the surgeon, who should also use enemata, and practise abdominal taxis. An accurate diagnosis of the cause of obstruction is not often possible, and the early use of anæsthesia and taxis is successful in many cases, whatever the causation, and prejudicial to but few. If these measures fail, and the symptoms increase after anæsthesia, exploratory laparotomy should be resorted to.

Intussusception in infants under one year should be treated wholly by taxis and enemata, as the prospect of recovery after abdominal section at this age is exceedingly slight. In older children, laparotomy is probably the best treatment. If the diagnosis is plugging of the gut by a gall-stone, belladonna should be freely administered, and if pain is severe, prolonged anæsthesia; also systematic efforts should be made to force enemata beyond the ileo-cæcal valve. Under no circumstances does this latter condition justify an operation, as with the above measures the probabilities of recovery are great. In cases of long duration, either the "rest, opium, and starvation plan," feeding entirely by the rectum, or repeated recourse to taxis and large enemata, should be adopted.

Mr. Hutchinson describes his method of taxis thus: Under full anæsthesia, the bladder and bowels being empty, the surgeon forcibly and repeatedly kneads the patient's abdomen, pressing its contents in all directions. The patient is then turned on his abdomen, upheld by four strong men, and vigorously shaken. Following this, he is supported by the feet, copious enemata given, and, while still in this position, vigorously shaken upward and downward. The latter, Mr. Hutchinson considers exceedingly important. However rough such treatment may seem, it is in no sense unscientific, but thoroughly rational, and its efficacy is attested by the reports of Mr. Hutchinson's cases.

Potato Poisoning.—The *Journal de Médecine et de Chirurgie Pratiques* for August, 1889, recounts the symptoms noted in one hundred men after eating the young sprouts of potatoes. The symptoms were those of gastro-intestinal irritation, with dilated pupils, sweating, disturbed vision, and vertigo. In most cases the illness lasted five days, but in none was there a fatal result.—*Therapeutic Gazette*, October 15, 1889.

[It seems not improbable that many unexplained cases of diarrhœa, cholera morbus, etc., are due to carelessness in the preservation of potatoes, as the young sprouts almost invariably contain solanine, a poisonous alkaloid.—Ed.]

Intestinal Obstruction from Impacted Feces.—At a recent meeting of the Surgical Section of the Royal Academy of Medicine in Ireland, Mr. W. Thornley Stoker read a paper on "Intestinal Obstruction," in the treatment of which his views closely coincided with those of Mr. Hutchinson, as abstracted above. Mr. Stoker dealt chiefly with the treatment of those cases where the obstruction was owing to the paralyzed condition of the bowel from the accumulation of feces or flatus. In this class of cases a lumbar operation was rarely indicated, and, owing to the extreme meteorism, laparotomy was usually a fatal proceeding. He urged the adoption of other measures previous to any precipitate opening of the abdomen, advocating the employment of pressure and massage, and the judicious use of purgatives. Of these latter remedies he considered undue fear existed. Of belladonna, when pressed to its full effect, he spoke highly, and quoted cases in evidence. Local treatment by rubefacients he disapproved of, as he did also of opium, which he regarded as masking symptoms, and doing little or no good. Tapping the bowel with an aspirator needle or fine trocar he had found of great use where much tympanites existed. The "long tube" he considered a dangerous and useless piece of apparatus.—*British Medical Journal*, October 5, 1889.

The Treatment of Varicose Veins.—For the radical cure of varicose veins Dr. C. H. Y. Godwin recommends the intravenous injection of pure carbolic acid, a method he has used for many years. Previously to the injection the skin is washed, and kept moist for some hours with a 1 in 20 carbolic solution. The patient is then directed to stand, and while in that position an Esmarch tube is tightly fastened around the thigh. On lying down the

veins will remain distended, when a number of injections are made into the most prominent places, each injection not exceeding half a minim. A firm clot forms in a few moments, but the tourniquet should be allowed to remain in place for ten or fifteen minutes longer. The only dressing required is a light, dry, antiseptic pad; the patient should remain in bed for a week. In choosing cases for this treatment a large cluster of varices is more satisfactory than a single dilated vein. In his long experience with the method Dr. Godwin has met with no accident, the results invariably being satisfactory.—*British Medical Journal*, October 5, 1889.

Various Methods of Treating Psoriasis.—The *Medical Chronicle*, October, 1889, in reviewing several of the more usual external and internal measures for the treatment of psoriasis, says:

Most authorities prefer arsenic to any other internal remedy. It may be given in the form of pills or as Fowler's solution, either in the ordinary way or hypodermically, when filtered or combined with an antiseptic. Tar water, carbolic acid, turpentine, copaiba, phosphorus, and even cantharides are spoken of as remedies. BULKLEY (*New York Medical Journal*, July, 1889) says that alkalies are often beneficial. "The best form to give them in is acetate of potassium, lithium, or calcium." Iron and cod-liver oil he finds useful. Oils and fats if digested, pure woollen clothing next the skin, and a warm equable climate he considers important factors in treatment. GUTTELING (*Weekbl. van het Nederl. Tijdsch voor Geenesk*, No. 17, 1889, abstracted in *Wiener med. Blätter*) reports on the results of treating 22 cases of psoriasis vulgaris with large quantities of iodide of potassium. The remedy was given frequently and the doses gradually increased. Five cases were completely cured; in 5 the iodide had to be abandoned. There was a decided improvement in the 12 cases remaining. The largest quantity given in one day was 57 grammes (about 14 drachms), and the largest amount taken during the whole course of treatment by a single patient was 3684 grammes (about 7 pounds). Several patients gained weight whilst taking enormous doses of the iodide, whereas only a few of them had acne or iodic purpura. The drug is said to be especially beneficial in recent cases. Daily doses of from 10 to 20 grammes (about 2½ to 5 drachms) are recommended. If, owing to failure, large doses have to be resorted to, the improvement will be incomplete. In the five cases which were completely cured, the course varied from fourteen days to four and one-half months. BARDUZZI (abst. *Brit. Journ. Dermat.*, from *Gazetta d. Ospitali*, 17, 1889) confirms the good results obtained by Dutchmen: "In three diffuse universal cases of very inveterate character, which had been treated with transient success by all the usual remedies, he obtained results from iodide of potassium which he never hoped for. In none of his cases was the amount of the drug larger than 7 grammes (105 grains) daily."

According to Bulkley, visits to mineral springs reputed to cure psoriasis lead only to disappointment. "He did not know of a single cure effected by sulphur waters, though the reputation of such waters was the highest of any." With regard to external applications, the treatment should vary with the cases. Bulkley has abandoned the use of chrysarobin, antharobin, and pyrogallol, because he has found that white precipitate ointment answers better than these preparations. BESNIER (abst. *Brit. Journ. Dermat.*) has recently recommended β-naphthol. He rubs in this ointment—β naphthol 10, adipis 90—every evening. In the morning the ointment is washed off with warm water and soap, and the skin is powdered with starch. According to Kaposi, who introduced β-naphthol into practice some years ago, the fifteen per cent. ointment, which he prescribes, is a valuable application for the hands, face, and scalp, inasmuch as it does not discolor the skin or the hair. Bulkley believes that local applications used early prevent the development of the eruption. There is no doubt that treatment is most successful when the eruption is fading, and least so when the eruption is coming out, the spots rapidly extending and the exfoliation very great.

The Influence of Olive Oil on Biliary Secretion.—The usefulness of olive oil in hepatic colic seems to be substantiated by the recent experiments of ROSENBERG, who, in dogs with permanent biliary fistulæ, finds that large doses of olive oil greatly increase the flow of bile, and decrease the specific gravity. (*Therapeutische Monatshefte*, September, 1889.) If further experiments prove the accuracy of the statements that olive oil assists the passage of calculi, not, as maintained by the supporters of the treatment, as a lubricant, but by increasing the secretion of bile and washing out the gall-stones it will probably be widely adopted if the patients do not object to the dose.

The Treatment of Erysipelas.—The treatment of erysipelas by the external application of germicides is certainly growing in favor. Carbolic acid, though used to some extent, has the disadvantage of being in itself an irritant if in sufficient strength to modify the disease. Creolin, which is undoubtedly a powerful germicide, is used by DR. KOCH, of Vienna, for this purpose. His formula is: one part of creolin, four of iodoform, and ten of lanolin. This is spread not only upon the erysipelatous area, but for an inch or more beyond its boundaries. To prevent rubbing off and to assist in absorption the whole is covered with thin gutta-percha paper. Dr. Koch believes that the iodine, which is set free in the combination, is, as well as the creolin, an important agent. However this may be, the results are apparently good, and the method is worthy of careful trial.—*Therapeutische Monatshefte*, September, 1889.

Prescription for Psoriasis.—The favorite prescription of MR. JONATHAN HUTCHINSON for psoriasis is:

℞.—Acid. chrysophanic.	gr. x.
Liq. carbonis deterg. (Wright's) .	♏ x.
Hydr. amm. chlorid. . . .	gr. x.
Adip. benzoat.	℥j.

Misce fiat unguent.

At night the patient should wash the diseased surfaces free from all scales, then standing before a fire rub on the ointment, devoting, if possible, half an hour to the operation. This proportion of chrysophanic acid is not irritating, and stains the linen but slightly. With some cases even a weaker chrysophanic ointment is entirely sufficient. Internally, Mr. Hutchinson prescribes arsenic, though he is not convinced that it is an important adjunct.—*Archives of Surgery*, July, 1889.

Use of Pilocarpine Hypodermatically in Tobacco and Alcoholic Amblyopia.—Huel and Leptat, in the *Annales d'oculistique* for March and April, 1889, speak very highly of the employment of pilocarpine subcutaneously in the treatment of the blindness or failure of vision seen in persons who use alcohol to excess. They state that the first injection naturally brings on a profuse sweat and salivation, and the vision becomes better at once and remains improved if no more of the drugs are used. In two cases with retro-bulbar neuritis with central scotomata for red, resulting from the abuse of alcohol and tobacco, pilocarpine produced a cure.

Staderini, who has used pilocarpine in the treatment of the eye, has arrived at the following conclusions:

First. Subcutaneous injections of pilocarpine are of value in most of the inflammations of the eye, particularly those occurring as a consequence of rheumatism, iritis, episcleritis, and inflammation of the optic nerve.

Second. They are valuable in combating those inflammations of the iris and ciliary bodies which are apt to follow the extraction of cataract, and they facilitate the absorption of exudates.

Third. In cases where opacities of a non-organic character occur in the vitreous humor, or in those resulting through infiltration, pilocarpine acts most favorably.

Fourth. In those forms of progressive myopia in which there is involvement of the retina, great amelioration is also brought about by the drug.

Fifth. It can be employed advantageously in certain forms of amblyopia and amaurosis, which are dependent, in all probability, upon disorder of the circulation with a serous transudation into the sensitive nerve centres.

Powder for Papular Erythema.—The following powder is recommended by Besnier, in *L'Union Médicale*, for the treatment of papular erythema:

℞.—Powdered boric acid . . . ʒss to ʒj.
Chalk
Oxide of zinc . . . āā ʒiij.
Powdered starch

This is to be dusted over the part. If the irritation is intense, a mild solution of boric acid is first to be applied and followed by the powder.

The Treatment of Phlebitis.—In *L'Union Médicale* for September 26, 1889, Muselier recommends the following treatment for phlebitis:

In cases of simple phlebitis, leeches should be applied and unctions of mercurial or opium ointment thoroughly rubbed in. Local baths are to be used if the inflammation involves an extremity. If the vein suppurates, free drainage is at once to be established, it being remembered that in spontaneous phlebitis the danger resides in the possibility of embolism. To prevent so grave an accident, the limbs should be placed in cushions and elevated in such a manner as to favor the venous circulation toward the trunk and the disappearance of œdema. Fixation is also a necessary accompaniment of the treatment, and all abrupt movements are to be avoided lest embolism should occur, and even in the application of mercurial ointment violent rubbing should be avoided for fear it may dislodge a clot. If the phlebitis is of long duration and there is much œdema of the limb, it may be well to apply an Esmarch bandage, and if, as a result of this compression, atrophy of the muscles occur, recourse must be had to electrical currents, massage, and baths.

The Antiseptic Treatment of Abscess.—The following method, given in the *Revue Générale de Clinique et de Thérapeutique* for October 10, 1889, as practised by Championnière, while it contains nothing unusual, may be practically useful. Before the operation, the region involved is washed with a solution of carbolic acid, made up as follows:

℞.—Carbolic acid . . . . 750 grains.
Glycerine . . . . 900 grains.
Boiled water . . . . 1 quart.

The bistoury is rendered aseptic by immersion in carbolized water, and, after the abscess is incised, its cavity is washed out with an antiseptic solution until the liquid returns perfectly clear. If the size of the abscess be large, a rubber drainage-tube is inserted, which is rendered antiseptic and contains a little cotton fibre, which is thoroughly soaked previously in the following mixture:

℞.—Glycerine
Crystalline carbolic acid . āā 375 grains.
Boiled water . . . . . 1 quart.

The position where the abscess occurred is now covered by a piece of rubber cloth over which is placed a bandage. Twenty-four hours later the wound is washed out a second time with the same solution as was previously employed, the drainage tube being replaced or left out according to the condition of the wound.

Successful Operation for Ankylosis of Jaw.—In the *Glasgow Medical Journal* for September, 1889, Mr. Campbell describes a successful operation for ankylosis of the jaw—a condition which is frequently so unmanageable. The case in question resulted from an injury many years previously. After unsuccessful efforts at separating the jaws by wedges and screw-gags, an incision was made on the right side extending from a point a little external to the margin of the orbit, downward and backward, parallel to the lower border of the zygomatic arch for a short distance, then directly downward over the ramus of the jaw for about an inch; the temporal artery was thus avoided. On clearing the soft parts from the bone, there was no demarcation between the jaw and the temporal bone; the zygomatic arch, the condyle and the coronoid process were all fixed together. The posterior border of the ramus having been defined, the parts representing the condyle and the coronoid process were chipped away with a chisel until a gap of about one-quarter inch was left between the skull and the ramus of the jaw. The jaws could now be forced apart to the extent of an inch. Passive and active movements were allowed on the third day, and three months after the operation the patient could eat solid food of any kind, the interval between the jaws being then about an inch.—*The Birmingham Medical Review*, October, 1889.

Gymnastics in Diabetes.—Dr. Aye reports three cases of diabetes in the *Berliner klinische Wochenschrift*, in which gymnastics played by no means an inconsiderable part

in the treatment. The first patient was a rather stout woman, æt. forty-three, who had suffered from the disease for a year and a half. The proportion of sugar was 9 per cent., and during a "cure" at Carlsbad it was reduced to 1 per cent. Thirst was only moderate, oppression in the head diminished, tremblings became less frequent, pain in back and debility disappeared completely. The patient could run without great fatigue, but the weakness of thought was not much improved. At the end of March the patient expressed herself improved in every way. The results were much better in two other cases; in one of them, in fact, the cure was complete. The author pleads for a trial of gymnastic treatment, although not equal perhaps to walking, or especially to mountain-climbing, it, in his opinion, deserves a place as a therapeutic measure, especially as in the two former the dosage cannot be so exactly measured as in the exercise he advocates. It has another advantage in being admissible in weak cases, and will no doubt form a useful adjunct to the other recognized methods of treatment.—*The Medical Press*, October 9, 1889.

Treatment of Ingrowing Toenail Without Operation.—DR. HOFMANN, of Erlangen, recommends a simple and painless method of treating this complaint. After the part is thoroughly cleansed and disinfected by sublimate solutions, a few drops of perchloride of iron are dropped on the affected spot. The edge of the nail is then gently raised and dried. This is repeated on the second and third day. If suppuration takes place, the hardened scabs are to be removed with forceps, and the perchloride again applied. The nail soon becomes soft and brittle so that it can be easily removed, and without pain.—*The Medical Press*, October 9, 1889.

Massage as an Aid to Intestinal Absorption.—MR. SYMONS ECCLES, in the *Practitioner*, seems to have conclusively proved the value of both local and general massage in hastening the absorption of the intestinal contents. To determine this he made use of Ewald's test, administering salol to fifty different individuals and noting the time of its first appearance in the urine. Later, to the same series of cases, salol was given and followed for fifteen minutes by abdominal massage, which considerably reduced the time elapsing between the ingestion of salol and its detection in the urine. Again, the patients received both general and abdominal massage for several successive days before the salol tests were repeated, when it was found that absorption was still more active. In two cases of tropical diarrhœa, after a few weeks of general massage, salol appeared in the urine thirty minutes after ingestion, whereas at the beginning of treatment two and a half hours elapsed. Mr. Eccles has also had most excellent results in the treatment of chronic dysentery by massage, muscular atony of the stomach and intestines, and various forms of cachexia, in which the gastro-intestinal tract has suffered. In some of these cases the salol test verified and confirmed the results attributed to massage.

Suggestive Therapeutics.—BINSWANGER in the *Therapeutische Monatschrift, Hefte*, iii., 1, 2, 3, 4, 1889, warns against the inconsiderate and incautious employment of hypnotism. He says that hypnotism under all circumstances has a disturbing effect upon the mental condition, and that subjects of experiment are always transiently hysterical, that the results in different individuals cannot be predicted, and that unfavorable results may follow. He further says that in severe hysteria is the chief ground for suggestive treatment, where the hypnotic suggestion is the most effective and the least dangerous. When other methods are available for cure hypnotism is not needed, and in hysteria minor it should be kept in mind that the possibility of a transition into hysteria major cannot be excluded in the use of hypnotism.—*American Journal of Insanity*, October, 1889.

The Subcutaneous Administration of Mercury.—DR. CHERNOGUBOFF has made a number of observations in the Miasnitski Hospital, in Moscow, in regard to the subcutaneous injections of the yellow oxide of mercury in connection with the treatment of syphilis, and has come to the following conclusions: Two-grain doses cause a quicker disappearance of all symptoms than smaller doses, reducing in ninety-two per cent. of cases the necessity for professional visits to one or two. In fresh cases an interval of ten or eleven days between the injections is sufficient to prevent salivation, but old cases require a longer interval. The injection should be made into the cellular tissue, and not into the muscles, to avoid the great pain in the case of the latter, and the frequent occurrence of abscesses. The treatment is said to cut short all symptoms, both when the disease is progressing and when it is on the decline; new spots, especially on the mucous membrane, are very rare. In tertiary syphilis, according to Dr. Chernoguboff, early gummata, and those which are breaking down, quickly disappear under the treatment; but, in impetigo and rupia, iodide of potassium is often required in addition. Local applications do not usually accelerate a cure, except in sore-throat with papular infiltration of the tonsils, which requires heroic treatment. Relapse occurs as in other methods after two or four months. Men and women equally bear well large doses; children from twelve to fourteen years require one grain only. The treatment is contraindicated in severe anæmia which has not been caused by the specific disease, in general exhaustion, undoubted alcoholism, chronic inflammation of parenchymatous organs, and in extensive dental caries; pregnancy is not a contraindication. Mercury is found in the urine in from four to eight hours after the injection.—*The Lancet*, October 12, 1889.

Bromoform in Whooping-cough.—To the already interminable list of remedies for pertussis has been added another, which, according to a DR. STEPP, is superior to any yet proposed. Bromoform is a clear, colorless liquid resembling chloroform, but having a density double the latter. The odor is agreeable, and the taste slightly sweet. Dr. Stepp tried it in seventy cases, with the greatest success upon children from six months to seven years. At the end of a few days the fits diminished, and in three weeks the patient was well. The following would be a convenient form of administering it:

℞.—Bromoform	. . . . .	♏ x.
Alcohol	. . . . .	ʒ j.
Syrup	. . . . .	℥ ss.
Water	. . . . .	℥ iij.—M.

A teaspoonful every hour.—*The Medical Press and Circular*, October 9, 1889.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, OCTOBER 26, 1889.

THE TREATMENT OF RACHITIS WITH PHOSPHORUS.

THE essential morbid change in rickets is softening of the bones and their consequent deformity. Histologically the process cannot be stated so positively, but the researches of Kassowitz seem to prove that increased vascularization of the osteogenetic tissues is the causation of the removal and non-deposit of the mineral salts. It is a long-recognized pathological law that lime salts are more readily deposited in tissues of slight vascularity than in those with an abundant blood-supply. Whatever the histological cause may be, the gross anatomical appearances naturally suggest the search for some drug whose tendency is to produce a deposit of lime, hence the administration of the calcium salts.

In 1872 Wegner, studying the physiological action of phosphorus on animals, noted that after its continuous administration the bones were much more dense, in some instances the cancellous tissue and medullary canal being entirely obliterated. These effects have been confirmed by other observers, and denied only by Kissel, of St. Petersburg, whose observations are open to criticism.

Wegner's observations led to the logical deduction that phosphorus would be found a valuable drug in rickets; a brilliant example of the utility of experimental therapeutics and a knowledge of pathology, for the clinical studies of Kassowitz, Friese, Jacobi, Montmolli, Hartwitz, Hochsinger, and, recently, of Anna Schabanowa, have confirmed the opinion of Wegner.

In the *Therapeutische Monatshefte* (abstracted in detail from *Jahrbuch f. Kinderheilkunde und physische Erziehung*), Anna Schabanowa analyzes the results of the phosphorus treatment of rickets in 105 children, varying in age from one month to five years. The phosphorus was administered after the method of Kassowitz, in almond oil, or in cod-liver oil, in doses of $\frac{1}{120}$ of a grain. The solution in cod-liver oil she found, as a rule, better tolerated. With this internal medication were combined salt-baths, as far as possible nourishing diet, and the usual hygienic measures. In 6 cases the results were brilliant, in 32 good, in 39 fairly good, in 22 poor, and in 6 the rachitic symptoms were aggravated; or, approximately, 75 per cent. of the cases were more or less improved. With most patients the body weight and size increased; in from three to six months the open sutures were decreased in size, the eruption of tardy teeth hastened, the circumference of the chest increased, the costo-cartilaginous swellings subsided, and the fontanelles closed. Particularly marked were the effects upon the nervous manifestations, laryngeal spasm, general convulsions, and hyperæsthesia; the sleeplessness and irritability disappearing in nearly all cases. In one case nocturnal enuresis was relieved. On digestion the effects were very beneficial, dyspepsia, constipation, and meteorism vanishing.

Allowing for the enthusiasm of the author, these results give important testimony as to the value of phosphorus in rachitis. The criticism may be made that the cod-liver oil, in which the phosphorus was usually administered, may have been the potent agent. Doubtless it played an important part; but such effects could never have been obtained with cod-liver oil alone, even under circumstances most favorable to hygiene; and Schabanowa's cases were mostly seen in dispensary practice.

With the steadily accumulating evidence at hand, it can be said that phosphorus has reached a permanent place in the therapeutics of rickets; but it should never be forgotten that there is no specific for this disease, and that all drugs are of secondary importance to the general and dietetic management of each individual case.

Phosphorus should be administered in small doses in an oily solution or emulsion. The possibility of fatty degeneration of the liver, as pointed out by Wegner, should not be forgotten; and Hartwig,

fearing this, advises occasional withholding of the drug to avoid danger. We believe no case has as yet been reported in which ordinary therapeutic doses caused degeneration, but, nevertheless, it may be well to bear such a possibility in mind when administering the drug for any great length of time.

SCROFULOUS GLANDS.

UNTIL comparatively recent years no medical term has been used more loosely, none conveyed less distinct conceptions than *scrofula*. It was alike applied to hereditary syphilis, to new formations, cutaneous diseases, and to most wasting diseases of children and adults, as it is yet in popular usage. Gradually it emerged from the maze of confused ideas surrounding it, and at the present day has come to signify a condition of the organism, rather than a distinct disease; a condition stamping characteristic marks on associated diseases, and with predispositions peculiar to itself, the most marked of which is excessive cell-proliferation. That this condition is a histological deviation seems most probable, and while Formad's assertion that scrofulous tissues contain an excess of lymphoid cells crowding the lymph spaces, has not been indisputably proven, it offers a satisfactory explanation of many otherwise inexplicable phenomena in the strumous. Though the relationship between scrofula and tuberculosis cannot be considered determined, caseated lymphatic glands, frequently the only manifestation of scrofula, are almost invariably tubercular, a menace to their possessor, and in consequence should be done away with.

The basis of treatment since the days of Lugol has been iodine in its various compounds, externally and internally, the syrup of the iodide of iron being the favorite. Mr. Frederick Treves, *Lancet*, September 21, 1889, in discussing the treatment of scrofulous glands enters a strong protest against the indiscriminate use of this preparation, believing it valueless and ranking it with the "royal touch" of history. From the sulphide of calcium he has seen no better effects. This is probably too sweeping a statement, though the syrup is much relied upon as a specific, and with so blind a faith in its potency, that other and more important details of treatment are lost sight of and neglected. Hygienic measures, good diet, and sea air are of vastly more use to the strumous than drugs, particularly drugs so prone to interfere with digestion as the iodide of iron. In local treatment Mr. Treves insists upon the necessity of seeking the peripheral irritant, which always exists, perhaps in a carious tooth, a chronic tonsillitis, ozæna, or eczema. Too much stress cannot be laid upon this much neglected point, for the cure of a lymphadenitis, simple or scrofulous, is hopeless if the area drained by the efferent vessels remains diseased. The time-honored local applications Mr. Treves entirely discards, believing that ointments are productive of good solely by virtue of friction, and that tincture of iodine increases the glandular irritation. Absolute rest of the parts involved he considers of great importance, and to secure this in the neck he advises the wooden collar of Mr. W. Knight Treves.

In 1882 Treves, to destroy these caseous deposits, used the cautery puncture. This he has since abandoned except as the best means of evacuating fluid accumulations, though for what reason it is superior to the knife he does not make clear. Whenever possible he excises the glands in their entirety, avoiding tearing of the tissues and endeavoring to secure primary union. Scraping with Volkmann's spoon is admissible in sinuses and old cavities, but not as a means of removing deposits. Mr. Treves has devoted so much careful work and thought to glandular disease, that his opinions may be considered as reflecting the most advanced opinions upon the subject.

EXPERIMENTAL STUDIES IN THE ETIOLOGY OF TYPHOID FEVER.

THE undoubted success which has attended the administration of intestinal antiseptics in typhoid fever proves the possibility of a favorable modification of the soil in which flourishes the germ of that disease. We are as yet ignorant of the conditions which render this soil arid in one case and fertile in another, but recognize their existence whenever we use the word "predisposition." The soil or culture medium referred to, is composed of the intestinal secretions and the débris of the food—the slag, so to speak, from which the nutritious ore has been extracted. It is evident, therefore, that the soil may be favorably modified in two ways: first, by antiseptics of approved value, such as thymol, naphthalin, carbolic acid, etc.; and, secondly, by a carefully selected diet. In the order of relative importance the latter indication should precede the former, but the humiliating fact must be recognized that our knowledge of diet is less than that of drugs.

A praiseworthy attempt to increase our knowledge of this disease is made by Rachford on another page of this journal. Believing, as do many others, that the symptoms of typhoid fever are largely depend-

ent on the products of the typhoid bacillus, namely, the ptomaines induced by its growth, he is probably the first to submit this belief to the test of experiment. Having cultivated the bacilli in various nutritive media and administered them with due precautions to rabbits, he found that the result varied according with the medium, in each case a food-substance, in which the organism has grown. The most interesting conclusion from these experiments is that the ptomaines produced by the growth of the typhoid bacilli in milk, which is the universal diet in typhoid fever, "do not cause either fever or nervous symptoms."

While the number of Rachford's experiments is too small to render them conclusive, they are suggestive enough to induce others to repeat them, and verify or disprove the deductions which have been drawn from them.

REVIEWS.

Diseases of the Eye. A Practical Treatise for Students of Ophthalmology. By George A. Berry, M.B., F.R.C.S. Edin. With colored illustrations from original drawings. Octavo, pp. 650. Philadelphia: Lea Brothers & Co., 1889.

It is a common custom for the author of a book to offer, in his preface, an apology for adding another volume to the great load which fills the shelves of medical libraries. The request of students, the experience of years, and the desire to record satisfactory methods of personal practice are the excuses usually given. It is hence novel and somewhat refreshing to find that Dr. Berry has, without apologetic explanation, "endeavored to give a description of the principal Diseases which affect the Eye, or lead in any way to impaired vision," and gratifying to state that he has accomplished his task with credit, having written a treatise founded upon the results of personal experience and honest analysis of ophthalmological literature, the whole tinctured strongly with the methods and practice of that master of his art Hansen Grut, to whom the book is gracefully dedicated.

A striking and useful feature is the plentiful supply of colored drawings, the work of Dr. Tatham Thompson, which is scattered through the text. These drawings consist not merely in the usual representations of typical diseased conditions of the fundus oculi, but also of the various disorders of the external coats of the eye; some of them, for example, the cut representing cicatricial ectropion of the upper lid, are wonderfully life-like; others, like the illustration of phlyctenular conjunctivitis, decidedly diagrammatic. The book is divided into three sections. The first is devoted to a consideration of the diseases of the eyeball and its appendages, including affections of the orbit, and concludes with a good discussion of Graves's disease. The descriptions are largely clinical—pathological anatomy being advisedly omitted—eminently practical, and the teachings for the most part sound and satisfactory. We are by no means in accord with all of the methods of practice therein detailed. We do not believe that when a simple or catarrhal conjunctivitis has become chronic, of the various astringent applications "alum in the strength of from two to eight grains to the ounce is perhaps the most useful," nor, in the management of diphtheritic conjunctivitis are we enamored of "the treatment recommended by Tweedie, of frequent bathings with a solution of quinine (three grains to the ounce)." Naturally, however, an author describes and recommends those procedures which have yielded in his hands satisfactory results. It has always seemed to us a mistake, in works on diseases of the eye, that so little attention was paid to the management of the bodily health of patients affected with disorders of the conjunctiva and cornea. Dr. Berry, while he has not neglected this important topic, follows, in too many instances, the common custom of indulging in vague directions, like, "Constitutional treatment should, of course, be adopted from the first."

The chapters devoted to diseases of the choroid, retina and optic nerve, and the section describing intra-ocular tumors are very good. The former have been revised by Mr. Gunn, and the latter is illustrated with several excellent colored drawings. Glaucoma is discussed with clearness and ability.

The second section of the book is concerned with the eye as an optical instrument; and the laws and errors of refraction, accommodation, and the methods of examining an eye, as well as the anomalies of the ocular muscles, receive elaborate consideration. So large a proportion of patients who come to an ophthalmic surgeon suffer from imperfect or painful vision the result of optical errors, that these topics demand careful presentation. The chief fault of the chapter, it seems to us, is the unnecessary introduction of mathematical formulæ—formulæ which would find suitable place in a treatise specially devoted to the refraction and accommodation of the eye, but uncalled for in the present book. On the other hand, certain methods of examination, like the shadow-test, are dismissed in a somewhat cursory manner.

In regard to the treatment of hypermetropia, Dr. Berry concludes that the strength of convex glass required is that which corrects the manifest portion of this error of refraction; that the glass should be worn constantly if asthenopia is present, but that in the absence of asthenopia it is sufficient to make use of the correcting lenses only for near work. In persistent asthenopia he suggests that the whole amount of the hypermetropia should be corrected, although he doubts whether this will prove sufficient to relieve the symptoms. The question of whether or not the patient should wear a full correction, has been so often discussed that it is not necessary to give it place in this review. We would merely suggest that in most instances other conditions beside the mere state of refraction will have to decide the line of practice, and that in the vast majority of instances, as we see refraction error, especially among school children, the mere correction of the manifest hypermetropia is not sufficient to give the relief which has been sought. The question of the diminution of hypermetropia in children, and the gradual conversion, in certain instances, of hypermetropia into myopia is clearly pointed out, and the very proper suggestion made that patients, who in early life have been ordered high convex lenses, must be examined from time to time in order to see whether or

not distention of the eyeball has taken place, rendering a weakening of the glasses necessary. Dr. Berry is disinclined to admit an intimate connection between inflammatory conditions of the conjunctiva, cornea, lids, and hypermetropia, believing that this has been much exaggerated. He prefers to consider these inflammatory affections as entirely independent disorders, although he admits that the presence of this state of refraction may aggravate and perpetuate these diseases. This seems to us to be the correct view in the vast majority of cases—a view which renders it none the less necessary, especially in blepharitis and similar affections, to correct the existing refraction error before a cure can be expected. Astigmatism is briefly discussed; in fact, the chapter is distinctly disappointing. Among the objective tests for astigmatism, that, in the opinion of the author, which gives the best results is retinoscopy. It certainly is most useful in patients who are not gifted in giving accurate answers to questions, or among children whose answers cannot be relied upon. The chapter on the ocular muscles and the treatment of strabismus is entirely satisfactory; so also is the section devoted to the examination of the eye, in which, as we might readily expect, the subjective symptoms of which patients complain are clearly and usefully described. Section III. is devoted to the operations, all of which have been gathered together in this portion, thus avoiding unnecessary repetition in the text. In the description of the operations for advancement of a rectus muscle, preference is given to Prince's method, which the author has found simple and effective. His own plan for performing this operation, although the same in principle, differs slightly in the details which Dr. Prince has described. This entire volume is eminently satisfactory, and we think that it should be in the hands of all students of ophthalmology. It is a credit to the author, and should be a matter of pride to English-speaking ophthalmologists. The publishers have spared no pains to make the book attractive in the printing and binding.

SOCIETY PROCEEDINGS.

CINCINNATI ACADEMY OF MEDICINE.

Stated Meeting, September 30, 1889.

DR. B. K. RACHFORD read a paper entitled

EXPERIMENTAL STUDIES ON THE ETIOLOGY OF TYPHOID FEVER.

(See page 453.)

DR. WHITTAKER said that if his remarks were in the line of criticism, he hoped that he would not seem to deny the value of the paper. At the same time, he could not see what could be gained by experiments in this direction. It was not claimed that any of the rabbits had typhoid fever, except one. Even in this one the spleen was not enlarged. It is still a question whether any other animal than man ever suffers from the disease.

The experiments made with a view to determine the proper diet for typhoid fever patients arrive substantially at the results reached by clinical medicine. Furthermore, he could not conceive what bearing such experiments could have upon man, because in man fever and stupor are present, even if the patient be confined to a milk diet. He had under observation at the hospital three cases, in each of which the fever had mounted to 100°–104°, with coma vigil and stupor, who were under a milk diet, exclusively. We must remember that typhoid bacilli are received into the body two weeks before the disease shows itself, be the diet what it may. The diet may aggravate but cannot change the character of the disease.

DR. LEONARD FREEMAN thought the essayist had not claimed that his rabbits died of typhoid fever, except in the case of rabbit No. 10. The experiments were carried out with the object of showing that the bacillus of typhoid fever when grown in different culture-mediums produced different ptomaines with various physiological effects. It was the action of the ptomaines and not the action of the bacilli which the author attempted to demonstrate; and it was rather a surprise when rabbit No. 10 died, apparently of true typhoid fever. It is claimed by most authorities that animals, including rabbits, do not have typhoid; but Dr. Rachford's interesting experiments furnish weighty evidence against this idea. The rabbit's intestines contained follicular ulcerations, and its spleen furnished a pure culture of the Koch-Eberth bacillus, identified by all the means known to bacteriology.

To illustrate the effects of slight external influences on ptomaine-formation, the results of temperature changes upon the bacillus of anthrax may be mentioned. When grown at a somewhat higher temperature than that to which it is accustomed, it loses its frightful virulency altogether or in part, and does not regain it, in some cases, until it is grown again upon a culture-soil suitable to its requirements—that is, until it has passed through the body of a mouse. This is a case in which an exceedingly virulent germ loses all its pathogenic properties by means of an insignificant change in its surroundings. Why may not the character of the ptomaine produced by the bacillus of typhoid be changed by similar slight alterations in its conditions of growth?

It was, in the opinion of the speaker, not the main object of Dr. Rachford's investigations to prove that milk was the best food in typhoid fever. This was merely a side issue. His investigations dealt with the ptomaines and their effects under different conditions of development.

DR. RACHFORD, in closing the discussion, said that in the presentation of this paper he had been careful to draw only such conclusions as were warranted by his experiments, and the accuracy of the experiments or the value of the conclusions drawn is to be judged by others. At the same time it seemed to him that, unless some flaw in the technique or the arguments can be shown, the resulting conclusions are not without value. If rabbit No. 10 died from typhoid fever, it requires no argument to show that this is testimony to a most important proposition, which, although almost universally believed, has never been absolutely demonstrated, viz., that the Koch-Eberth bacillus is the cause of typhoid fever.

He wished also to state that his sole object in undertaking these experiments was to demonstrate that the typhoid bacillus under different conditions produced ptomaines differing in physiological and poisonous properties. His experiments, he thought, warranted this conclusion.

The third conclusion, that milk is the best diet in

typhoid fever, is an opinion long since established by clinical experience. Yet this does not detract from the value of experimental studies which not only corroborate this opinion, but also show us why it is so. The fact, that "some cases of typhoid fever fed upon an exclusive diet of milk have most profound nervous symptoms," when considered in the light of these experiments, gives us an important insight into the etiology of the nervous symptoms of typhoid fever. If the nervous manifestations were produced only by ptomaines formed in the intestinal canal we could, by an exclusive diet of milk, prevent these symptoms. It seems, therefore, probable that the nervous symptoms are produced not only by ptomaines formed in the intestinal canal, but also by ptomaines formed in the various organs of the body, wherever the bacilli find a lodgement and multiply. While a milk diet could in no way affect the symptoms arising from this latter source, it can, by preventing those caused by the absorption of intestinal ptomaines, very much modify their severity.

Since the question of typhoid fever being a "mixed infection" had been introduced into the discussion, Dr. Rachford wished to say that he knew of no evidence either experimental or clinical that would warrant such an opinion. That other than typhoid bacilli are capable of producing poisonous ptomaines in the intestinal tract is quite true, and that these bacilli may in this manner act as a complication of typhoid fever, scarlet fever, puerperal fever, and other diseases, is also probable, but they exist simply as a complication, and are no more the cause of typhoid fever than they are of scarlet fever or any of the other acute infective diseases.

AMERICAN RHINOLOGICAL ASSOCIATION.

Seventh Annual Meeting, held at the Palmer House, Chicago, Illinois, October 9, 10, and 11, 1889.

WEDNESDAY, OCTOBER 9TH.—MORNING SESSION.

The Association was called to order at 10 A.M by the PRESIDENT, DR. JOHN NORTH, of Toledo, Ohio.

The following gentlemen were elected Fellows of the Association: Dr. E. L. Siver, of Fort Wayne, Indiana; Dr. C. L. Dreese, of Goshen, Indiana; Dr. O. F. McGahan, of Chattanooga, Tenn.; Dr. Ely McClellan, of Chicago, Ill.; and Dr. L. B. Gillette, of Omaha, Neb.

After the election DR. JOHN NORTH delivered the

PRESIDENT'S ADDRESS,

which dealt (1) with the relations which the physician bears to the public; (2) the relation of the specialist to the general practitioner and other specialists, and (3) what the American Rhinological Association has done for the public and for the profession.

A paper was read by DR. L. B. GILLETTE, of Omaha, entitled,

REPORT OF A CASE OF BRAIN ABSCESS EMPTYING INTO THE NASO-PHARYNX.

The patient, aged twenty years, farmer by occupation, strong and healthy, while working on an embankment in September last, was driving a loaded wheel-scraper when in some way it became unlatched, and the handle flying up struck him forcibly under the chin, knocking him down a sixteen-foot embankment where he lay unconscious for some thirty minutes. A week afterwards he noticed that something was wrong with his eyes. About the 15th of October he began work in a brick-yard, and after three days complained of nervousness and slight headache. On the evening of the third day he got wet in a rain, which was followed by a chill and fever. A physician who was called pronounced it malarial fever. When Dr. Gillette was summoned he found the patient suffering with intense headache, the pain extending down between the shoulder-blades, and particularly into the right arm. Both pupils were widely dilated. Temperature was 101°; pulse 105°. A day or two after this there developed marked evidence of compression of the brain. The temperature fell to 96°; pulse was as low as 42; and the respirations nine or ten per minute. Complete paralysis of right side, and partial paralysis of left side came on, with complete loss of sensibility as well as of consciousness. The patient also lost the sense of sight, and remained in this condition four days without any perceptible change. Both food and medicine were always taken regularly. Dr. Gillette was surprised one morning by finding him much improved. The mother stated that during the night the patient had a violent attack of coughing, and showed the sputum, which consisted of about an ounce of green, stinking pus mixed with mucus. From this time the patient improved. There was an immediate return of consciousness, an increase of the heart's action and the respirations. Examination of the throat showed that the pus came from above. None came from the Eustachian orifices, but when the patient leaned forward it would run from the anterior nares. The discharge lasted two weeks. Where it came from, or how it got through, Dr. Gillette could not tell, but his opinion favored the ethmoidal and sphenoidal sinuses. As a result of this terrible ordeal the patient, when seen three months since, was totally blind, with the sense of hearing lost in right ear, his right arm useless, and his mind not as clear as formerly.

In the treatment of the case Dr. Gillette used opium, quinine, mercury, cold applications to the head, and cupping at the back of the neck, also the three bromides as they were indicated. When marked compression of the brain developed, he used eighty grains of iodide of potash daily, continuing for thirty days.

DR. THOMAS F. RUMBOLD, of St. Louis, read a paper entitled

REASONS WHY SO MANY PHYSICIANS FAIL IN TREATING CHRONIC RHINITIS.

The first reason is defective instrumentation. Not one of the physicians whose offices he visited had a tongue depressor that would not cause a patient to retch when introduced into the mouth, and the blades of all the instruments were too wide to go between the teeth, and too long. These depressors were seldom used in examinations, but instead, the exceedingly defective method of drawing the tongue out with a napkin.

The second cause of failure is that the spray-producers used were made for watery solutions only. None of these physicians possessed an instrument that would throw warm vaseline, which he considers superior to fluid cosmoline.

Third, the compressed air used was taken from a reservoir of a capacity of from three to five gallons, at

a pressure of from thirty to seventy pounds. The reservoir was filled by an air-pump whose barrel was made of brass; the piston was packed with leather, which readily decomposes, and the pump was lubricated with rancid oil. Ten pounds is the greatest pressure that the mucous membrane will tolerate, while the majority of patients require only from six to eight pounds pressure.

The fourth reason for failure is an *anatomical* one. By this Dr. Rumbold referred to errors in locating the disease. Innumerable clinical observations and post-mortem examinations prove conclusively that rhinal inflammation invariably commences on the superior and middle turbinated processes and extends in all directions from the nasal passages into the passages connected with them.

Keeping in mind that every irritant produces inflammation, the indications for treatment of chronic rhinitis may be summarized as follows:

(*a*) The diseased secretion, which is always irritating, should be removed. Morbid growths, also being irritating, should invariably be removed.

(*b*) The new secretion, which is formed upon the cleansed surfaces, should not be allowed to become acrid.

(*c*) Hygienic and sanitary measures should be insisted upon.

DR. A. DE VILBISS, of Toledo, in opening the discussion, differed from Dr. Rumbold in that he did not believe properly tanned leather readily decomposes. Rancid oil for lubricating the air-pump is hardly ever used. Personally, he used vaseline and naphthol. With regard to vaseline, it was used as a protector to the mucous membrane on account of its density.

DR. O. F. MCGAHAN, of Chattanooga, heartily concurred in what Dr. Rumbold had said regarding vaseline. Where a protection of the surface is desired, nothing will take the place of vaseline. He sometimes uses iodine in weak solutions, and has so far observed no ill effects following its use.

DR. A. G. HOBBS, of Atlanta, uses the liquid vaseline. First, for cleansing purposes; and, second, for its convenience. He can warm it much more rapidly than the solid vaseline. The danger and greatest objection to the douche in cleansing the nasal passages, is its liability to set up a catarrh of the middle ear.

DR. JOHN NORTH, of Toledo, did not favor the use of tongue depressors, and believed that patients should be trained to manage their tongues without them. He uses the oil of vaseline for cleansing the nasal passages, with an alkali, eucalyptus, or some other antiseptic dissolved in it.

DR. C. L. DREESE, of Goshen, Indiana, read a paper on

REFLEX SYMPTOMS OF RHINAL DISEASES, WITH REPORTS OF CASES.

The first case was one of heart, stomach, and lung troubles, caused by sympathy from rhinal disease. The removal of the latter affection was followed by recovery from the former. The second was one where incontinence of urine, as a reflex symptom of chronic catarrh, was cured by treating the catarrhal trouble alone. In the third, epilepsy was a complication of rhinal disease.

AFTERNOON SESSION.

DR. C. H. MOORE, of Indianapolis, contributed a paper on

OCULAR REFLEX SYMPTOMS OF NASAL DISEASES.

He had relieved a case of neurotic affection of the Eustachian tube of the left ear, by spraying the nasal passages with vaseline. Hack mentions a number of cases of hemicrania and asthma cured by the galvano-caustic destruction of hypertrophied nasal mucous membrane. Voltolini demonstrated that asthma could be relieved in some cases by the removal of nasal polypi. A certain group of eye symptoms, as lachrymation, photophobia, conjunctival hyperæmia, are observed in a number of patients under the care of the rhinologist, when the examination of their eyes reveals no anomaly. The vision may be normal, no eye-strain present, the conjunctivæ healthy, the puncta lachrymalia normally situated, and the tear ducts open. For such cases a simple eye-wash may have been ordered, cold or warm applications recommended, and a general hygenic treatment pursued without any relief to patients, while treatment of the rhinal affection was generally followed by a cure.

In the cases reported the following symptoms were noted:

1. Burning and smarting sensation of the eyelids, especially in the morning.
2. Difficulty of distinguishing objects in daylight.
3. Increased vascularity of the conjunctiva and lachrymation on exposure to the air.

DR. N. R. GORDON, of Springfield, Illinois, said his rule of proceeding with such cases is to examine the eyes for the condition of refraction, which, if normal, and no other source of irritation can be found in the eye, he examines the mucous membrane of the nasal passages, where very often the cause is found.

DR. E. R. LEWIS, of Indianapolis, said there was no doubt that a number of such cases are being constantly referred to the rhinologist. About one-third of his cases were sent to him by oculists, but not until the eye-trouble had been corrected. This he believed to be the logical course to pursue in such cases.

DR. E. FLETCHER INGALS, of Chicago, related the case of a lady which illustrates the possibilities of eye-trouble being caused by nasal disease. She came to him with hypertrophic rhinitis. He proceeded to cauterize the turbinated bodies, and before she left the office she asked him if he could not do something for her eyes, stating that she was unable to use them more than five minutes at a time. He referred her to an oculist; on her return, two weeks later, she said she had not been to an oculist, but that the day after the nose had been cauterized she was able to read at night without difficulty.

DR. N. R. GORDON read a paper on

THERAPEUTIC MEASURES IN RHINOLOGY.

He said that after the surgical removal of hypertrophied tissue, a local treatment, continued at short intervals for one or two years, or even longer, is necessary. This should consist in the application of the oil of vaseline with a small amount of eucalyptol, or something of that character. Astringents do but little, if any good. Where the oil of vaseline fails, salt and water in proper propor-

tions with a small amount of Listerine or Dobell's solution are suitable remedies. To prevent mouth-breathing during sleep he recommends his patients to wear a little instrument made of celluloid that fits between the teeth and lips.

In atrophic catarrh, after the removal of all secretion on the surfaces, where the mucous membrane is very thin, or even ulcerated, he finds the application of a solution of resorcin, one drachm to the ounce, to be exceedingly beneficial. In the most unyielding and obstinate forms of nasal catarrh he uses a glycerine suppository composed of 95 per cent. glycerine, and 5 per cent. stearin. The solidified glycerine is placed so as to come in contact with the atrophied or ulcerated portion of membrane. The glycerine soon asserts its well-known affinity for water, and the result is an abundant flow of thin mucus.

Thursday, October 10th.—Morning Session.

Dr. C. H. Von Klein, of Dayton, Ohio, read a paper entitled

atrophy, hypertrophy, and deviations of the septum,

in which he said he had examined the nasal cavities in over 600 patients, and found not more than 2 per cent. with absolutely straight division of the nares. In almost every case he observed deformities of some sort, either atrophy, hypertrophy, or deviation.

The causes which most commonly cause deviation of the septum arise during babyhood. When children commence to creep and walk they frequently fall, and, nine times out of ten, on their nose. Personal observation leads Dr. Von Klein to believe that atrophy of the septum is confined to the cartilaginous portion. Hypertrophy, on the other hand, is confined to the osseous portion and these conditions are generally caused by such injuries as may occur to any other part of the bony system.

This paper was followed by one on

the treatment of chronic nasal catarrh,

by Dr. C. F. McGahan, of Chattanooga, in which the author said: Formerly this disease was treated principally with strong astringents. Where we have polypi the first thing to do is to remove them, either by the snare or the galvanic cautery. Where they are located in the anterior chamber, he prefers the cautery; but when they are in the posterior chamber of the nose, the snare. Acids he does not like in the treatment of hypertrophies, as it is impossible to control the amount of tissue which they destroy, and the pain is greater than that of the cautery. The excessive hypertrophy being reduced, we have simply a case of chronic catarrh to combat.

Having cleansed the nasal cavities thoroughly with Dobell's solution, or the combination with Listerine which is recommended by Lefferts, we are now ready to apply our medicaments. In moderate hypertrophy he generally uses a spray of vaseline with a combination of the iodides, or with iodine and carbolic acid, which should be used about three times a week. On account of the hydragogue effect of glycerine upon the tissues, it occurred to him some time ago that in hypertrophic conditions of the nasal cavity it might be useful by drawing water from the tissues and thereby reducing them in size. He had often seen it advised in combination with other drugs in the different sprays, but his way of using it was similar to that of the gynecologist. The cavity having been thoroughly cleansed, he applies to the hypertrophic membrane a tampon soaked in a solution of glycerine one part, water four parts, which he allows to remain from one to four hours. As the membrane becomes accustomed to the glycerine, he rapidly increases the strength until equal parts of it and water are used.

Afternoon Session.

Dr. A. De Vilbiss, of Toledo, contributed an interesting paper entitled

surgical treatment in diseases of the nose,

in which he said that he did not wish to be understood as holding that every case of nasal catarrh demands surgical interference, but that in every case that does demand operation a catarrhal condition of the nasal passages is usually found. He has relieved frontal headaches, mental depression, etc., by the removal of hypertrophic tissue from the middle turbinate. He believed the time was not far distant when the sphenoidal and frontal sinuses, posterior and anterior ethmoidal cells (after death) would be examined at autopsies. Schwable, Axel Key, and Retzius have demonstrated the fact that not only can the lymphatics of the nasal mucous membrane be injected from the subdural and subarachnoidal spaces, but if force be used the fluid will pass through the lymphatics to the surface of the nasal mucous membrane. Permanent nasal stenosis should be relieved by an operation, as it is due either to traumatism, hypertrophic tissue over turbinate bones, thickening of tissue or deflections of the nasal septum, gelatinous polypi, adenoma of vault of pharynx, fibromata, or sarcomatous tumors. Preparatory to operating he cleanses the nasal cavities, and after operation protects the cut surfaces by keeping them covered with iodized or carbolized albolene or vaseline. Hemorrhage he controls by cotton plugs. If the source of the hemorrhage is well back in the nasal cavities, he uses small cotton plugs tied with a string in the form of a kite-tail, which are easy to introduce and easy to remove.

A paper by Dr. E. L. Sessions, of Hillsboro, Texas, entitled

the administration of quinine where there is defective hearing,

was read by title in the absence of the author.

Friday, October 11th.—Morning Session.

At the solicitation of Dr. Seth S. Bishop, of Chicago, a committee to report annually was appointed by the President to coöperate with the United States Hay Fever Association, with reference to the investigation and treatment of hay fever.

Dr. R. S. Knode, of Omaha, contributed a paper on the

importance of constitutional treatment in rhino-pharyngeal inflammations,

in which he said the rhinologist often becomes discouraged with the means at his command when he finds

that patients do not improve, but if their history was carefully investigated there would be found some diathetical condition causing the nasal trouble, which, if relieved, would be followed by a subsidence of the local inflammation. This catarrhal condition frequently extends into the stomach and intestines, and from the duodenum to the ductus choledochus, when we have the combined symptoms of gastro-intestinal catarrh and jaundice.

The principal sympathetic phenomena caused by this condition are sick headache, depression, melancholy, sleeplessness, hypochondria, disturbed heart's action, lassitude, and irritable temper.

The treatment of such cases is the usual treatment for gastro-intestinal catarrh.

DR. E. L. SIVER, of Fort Wayne, Indiana, read a paper on

REFLEX INFLAMMATION OF THE NOSE AND THROAT.

The author reported a case of laryngitis with aphonia, which lasted two weeks, and, he thinks, arose from a deflected septum and posterior hypertrophy of the inferior turbinated bone.

DR. A. G. HOBBS, of Atlanta, read a paper on

CATARRHAL NEURALGIA,

by which he meant to include not only the headache and browaches that are caused by pressure of nasal hypertrophies or foreign bodies, but all reflex pains that have for their origin pressure in the nasal cavities, wherever located. He had no statistics bearing upon the comparative frequency of catarrhal and ocular neuralgias other than his own note-book of the last three years. In it he found fifty-four cases under the combined headings: *Catarrhal neuralgia, ocular headache, and catarrhal and ocular neuralgia combined;* thirty-six cases occur under the first caption, fourteen cases under the second, and four cases under the third.

After recognizing the etiology of a case exhibiting these reflex pains, temporary relief should be given the patient by the application of cocaine sprays, or in the case of complete stenosis, the cotton probe saturated with cocaine, followed by the spray. The effort then should be to reduce the pressure permanently by the most rapid means. If the pressure be due to a polypus, extract it; if to a deflected septum, remove the deflection; and if it be (as is most likely the case) due to an hypertrophy, reduce it with the galvano-cautery, the snare, glacial acetic acid, or chromic acid. He most frequently resorts to the latter. After the removal of the pressure, pain decreases to a great extent; if it does not entirely cease, when the more soothing treatment of vaseline sprays, in combination with cocaine, pinus canadensis, oil of terebene or oil of eucalyptus, daily or triweekly, will complete the resolution.

He knew of no class of cases that applied to the rhinologist for relief in which treatment gives more prompt and satisfactory results. Indeed, if the diagnosis is correct, the result is absolutely sure under proper treatment

DR. ELY MCCLELLAN, of Chicago, read a paper on the *Physiological and Therapeutic Action of Certain Drugs in the Treatment of Affections of the Upper Air-passages.*

OFFICERS FOR 1890.

President.—A. G. Hobbs, M.D., of Atlanta, Ga.

First Vice-President.—A. B. Thrasher, M.D., of Cincinnati, Ohio.

Second Vice-President.—E. R. Lewis, M.D., of Indianapolis, Ind.

Secretary and Treasurer.—R. S. Knode, M.D., of Omaha, Neb.

Librarian.—John North, M.D., of Toledo, Ohio.

Member of Council.—C. H. Von Klein, M.D., of Dayton, Ohio.

Place of next meeting, Louisville, Ky., in 1890, in conjunction with the Mississippi Valley Medical Association.

CORRESPONDENCE.

BALTIMORE.

(*From our Special Correspondent.*)

To the Editor of THE MEDICAL NEWS,

SIR: The period of summer stagnation is now past, and the currents of medical life are beginning to quicken once more. Many of our prominent physicians have taken the opportunity to run across to Europe, whence they send home enthusiastic accounts of the great clinics to which the ready courtesy of foreign professors has given them access. The opening of the training-school for nurses of the Johns Hopkins Hospital, on the 9th inst., was largely attended by the physicians and prominent citizens who were invited, and the ceremony, the neatness and intelligence of the nurses, the careful arrangements for the comfort and the training of the pupils, as well as the "afternoon tea," to which all were asked, formed the topic of much conversation after the return of the favored guests to their homes. It is to be hoped that the Baltimore public will prepare for the advent of these graduates by enlarging their ideas of nurses' wages, for, if not, the cities of the North will reap all the benefits of our training-school.

As to what a nurse is to do when she is chosen to serve under a doctor who is ignorant of modern advances in medical and surgical treatment, and who "doesn't see any use in disinfecting typhoid-fever stools," or who "never split a perineum in forty years' practice of obstetrics," is a hard matter to decide.

The Medical School of the Johns Hopkins University, the University itself, and the Hospital have all won such high esteem from our citizens that there is not the faintest doubt that, should the Baltimore and Ohio stock be entirely lost, Baltimoreans would in due time provide fully, either by donation or by legacy, for their establishment on a firm basis. Fortunately, the stock of this road is rapidly increasing in value, and before long all receipts may be expected to equal their original amount.

It is reported that the Medical School of the University of Maryland has terminated its contract with the Sisters of Mercy, and will engage trained nurses (not belonging to a religious order) in their stead.

The College of Physicians and Surgeons has appointed Dr. George Preston, a gentleman well known for his work in diseases of the nervous system, to lecture upon physiology during the coming winter. Dr. George Rohé, whose writings upon diseases of the skin and hygiene, and medical electricity are well known, has been chosen

to fill the Chair of Obstetrics in the same institution. Although he has written little upon this subject, it is expected that, with his experience based upon private obstetrical practice, he will make a name for himself in this as in other branches of medicine. Prof. Sewall is at present in ill-health, and has been compelled to delay his entrance upon his duties at the College.

DETROIT.

(*From our Special Correspondent.*)

To the Editor of THE MEDICAL NEWS, .

SIR: On the 7th inst. the Detroit Medical and Library Association held its thirteenth annual meeting, and the reports of the secretary and treasurer showed the Association to be in a most flourishing condition. It numbers one hundred and twenty-two active members on its roll, and is the leading medical society of the city, and I may say, from the amount of work accomplished, in the State.

An item of interest to the State of Michigan, more particularly to Ann Arbor and Detroit, was the election, by acclamation, of Dr. Donald Maclean, late Professor of Surgery in the University of Michigan, to the presidential chair of the Detroit Medical and Library Association for the coming year. It will be remembered that Dr. Maclean, who has been connected for the past nineteen years with the Medical Department of the University of Michigan, has done a very large amount of successful work, and brought the department to the high position it now holds, was compelled to resign from the Chair of Surgery on account of his persistent efforts to move the Clinical Department to Detroit, where it might enjoy a larger field, and more thoroughly fit the students for active practice; the Board of Regents deemed it best for the welfare of the University and the education of students to keep the clinic in the small town of Ann Arbor, and thought that Dr. Maclean's presence in the Faculty was a disturbing element.

In addition to the above, and as an evidence of the entire approbation of the movement to establish the Clinical Department of the University in Detroit, Dr. J. E Frothingham, Dr. Maclean's colleague in the movement, was elected by unanimous vote to the presidency of the State Medical Society, at its meeting held in Kalamazoo last May.

The Association of Baggagemen, which recently met in this city, passed resolutions insisting that all bodies of persons dead from contagious diseases, held for transportation, must be properly prepared for shipment by being wrapped in sheets saturated with mercuric chloride and placed in metallic caskets, to prevent the spread of disease.

The Michigan State Board of Health, at Lansing, has recommended that typhoid fever be classed with diphtheria, scarlet fever, and similar affections, and that it be reported in a similar manner to the health officer of the city or town in which it occurs; furthermore, it recommended the adoption of a system of placarding houses where such cases exist. The suggestion is at present under the consideration of the Detroit Board of Health, and Dr. William Brodie, its president, has issued invitations to the physicians of the city to meet and consider the advisability of adopting the measure.

An epidemic of dysentery has been prevailing at Stockbridge, Michigan, for some time past, which presents the disease in a typical form.

NEWS ITEMS.

The Southern Surgical and Gynecological Association.—The annual meeting of the Southern Surgical and Gynecological Association will be held at Nashville, Tennessee, on the 12th, 13th, and 14th of November, under the presidency of Dr. Hunter McGuire, of Richmond, Virginia. The programme promises to be a most interesting one. In all, thirty-eight papers will be presented, among which are the following: Direct Herniotomy; Abortive Treatment of Acute Pelvic Inflammation; Relation of the Nervous System to Reparative Surgery; Cranial Surgery; Treatment of Ectopic Pregnancy; Laparotomy in Extra-uterine Pregnancy; Experimental Study of Intestinal Anastomosis; Operative Interference in Ascites; Puerperal Convulsions; Coccygodynia; Improved Cæsarean Section *versus* Craniotomy; Tropho-neurosis as a Factor in the Phenomena of Syphilis; Gynecology in its Relation to Obstetrics; Triple Amputations; Treatment of Contracted Bladder by Hot-water Dilatation; The Achievements of Modern Surgery; Pus in the Pelvis, and how to deal with it, etc.

Among the members of the profession intending to read papers are the following: Drs. R. B. Maury, of Richmond, Va.; Wm. C. Dabney, of the University of Virginia; D. W. Yandell, of Louisville, Ky.; C. Kollock, of Cheraw, S. C.; G. Frank Lydston, of Chicago, Ill.; Joseph Taber Johnson, of Washington, D. C.; A. Lapthorn Smith, of Montreal, Canada; J. Ewing Mears, of Philadelphia; Joseph Price, of Philadelphia, and others.

Trouble over the Presidency of a Medical Staff.—The Bushwick Dispensary in Brooklyn is just at present involved in a litigation because of a quarrel between two rival factions in the medical board. As these two parties have both elected presidents, each of whom claims that he has been legally appointed, one of them, Dr. Sizer, has applied to the Supreme Court for a mandamus obliging the board of trustees to recognize him as the legally elected officer.

Smallpox in Kings County, New York.—During the last twenty-five years it is estimated that there have been 4800 cases of variola in Kings County, New York, with 1200 deaths; while of varioloid there have been 1500 cases with only 2 deaths.

Cincinnati Hospital.—The successful candidates in the competitive examination for the position of residents to the Cincinnati Hospital were Messrs. Minor Morris, John H. Sandis, M. B. Brady, Lincoln Mussey, A. H. Freiburg, and H. W. Bettmann, students of the Medical College of Ohio, and Mr. Arch. I. Carson, of the Miami Medical College.

Medical College of Ohio.—This institution opened with a much larger attendance than for several years. No preliminary course of lectures is now given; but for three weeks preceding the opening of the regular session, more than eighty students were engaged in practical work in the chemical, histological, pathological, and bacteriological laboratories.

Leprosy in the Sandwich Islands.—The leper colony of the Sandwich Islands now contains less than 100 inmates, the majority being males. The number is on the decrease. The Hawaiian Government devotes $100,000 annually toward the maintenance of the colony. According to Dr. Hoffman, the resident physician, the duration of the disease is about eleven years. Dr. Hoffman is himself a victim of leprosy.

A New Illinois Medical Register.—Dr. Rauch, Secretary of the Illinois State Board of Health, announces that a new medical directory for his State will soon be published. There has been no revised edition of this useful publication since 1886, the Secretary's hands having been tied by unfriendly legislators and a want of the necessary funds.

Warner's "Safe Cure".—The *New York Medical Journal* of October 19, 1889, states that the police of Vienna have seized the entire stock of "Warner's Safe Cure," held by the pharmacists of that city. This was done not so much because of the character of the compound as because of the charlatanic advertisements which accompanied the nostrum. The agents for its sale had complied with the Austrian law, which directs that the formula of its composition shall be made known in regard to every proprietary medicine before it can be put on sale in the pharmacies. The *Pharmaceutische Post* is quoted as saying that the fault really lay in the quackish pretensions that were published in relation to the compound. Very severe rulings and examples have recently been made against certain preparations on that account.

Dr. James Downie, a young Scotchman who has been imprisoned on the charge of homicide, in Brooklyn, N. Y., has been set at liberty, the Grand Jury having found the testimony against him entirely inadequate to justify his detention. He will probably return to Glasgow, where he formerly practised.

A Biological Endowment.—Dr. Daniel Ayres, of Brooklyn, last week, made known his intention to give to the Wesleyan College eighty-six acres in New Jersey, worth over $20,000; this is an additional endowment of the Department of Biology, to which he gave $25,000 last April. Dr. Ayres feels called upon to befriend the cause of biology for the reason that in our colleges this important branch is about the last to be remembered when endowments are being dispensed.

Dr. W. Remsen Taylor, the Heath Officer of Long Island City, has been charged with receiving extortion money, for permitting certain acts on the part of contractors engaged in filling sunken lots. The persons who paid the money are not indicted, but the alleged receiver of it is. Dr. Taylor, in his own defence, avers that the funds paid him were used for the disinfection of the materials brought to the town, and for other proper sanitary purposes.

Typhoid Fever at Yale College.—Two deaths from fever alleged to be typhoid occurred last week among the collegians at Yale, and six cases of sickness of like nature have been reported among the students. Dr. Seaver, the medical consultant to the University, has expressed doubt as to whether it is enteric fever in all the cases, and no common cause for them can be made out.

Philadelphia Polyclinic.—At a meeting of the Board of Trustees of the Philadelphia Polyclinic held October 21, 1889, Dr. R. J. Levis was elected Emeritus Professor of Surgery; Dr. Charles B. Nancrede, Emeritus Professor of Orthopædic Surgery; Dr. Charles H. Burnett, Emeritus Professor of Otology; and Dr. J. Solis-Cohen, Emeritus Professor of Laryngology. Dr. T. G. Morton was elected to the Chair of Orthopædic Surgery, Dr. T. J. Mays to that of Experimental Therapeutics and Physiology.

The Chair of Clinical Surgery was filled by the election of Thomas S. K. Morton, M.D. Professor C. L. Bower, M.D., was elected Adjunct Professor of Clinical and Operative Surgery.

A plan for the progressive endowment of free beds, supplementing the present arrangement, was adopted whereby a person can, by the payment of $500, endow a free bed for one month in every year in perpetuity. By this arrangement one month may be added at a time until a bed becomes free all the time in perpetuity. The report of the Building Committee was read, in which it was stated that contracts had been signed for preliminary work to the amount of $25,150. About $30,000 will be required to finish the building, and it was decided to push the building to completion as fast as donations for the purpose could be obtained.

The laying of the corner-stone of the new Polyclinic building, on Lombard Street, west of Eighteenth, will take place on the afternoon of November 2d, at 3.30 o'clock. Mr. Clifford P. McCalla, Grand Master of the Masons of the State of Pennsylvania, will officiate at the Masonic ceremonies, and Dr. R. J. Levis's testimonial free bed fund will be presented by Mr. C. B. Baeder, Chairman of the Committee having in charge the raising of this $5000 fund. Judge William N. Ashman, of the Orphans' Court, will accept the custody of this fund on behalf of the trustees. Hon. Henry K. Boyer will deliver the address of welcome, and Professor John B. Roberts, the originator of the Institution, will read a retrospect. The ceremonies will last about an hour.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING OCTOBER 17, 1889.

BERTOLETTE, D. W., *Surgeon.*—Detached from the "Franklin," and ordered to duty at the Naval Hospital, Philadelphia.

RUSH, N. H., *Passed Assistant Surgeon.*—Detached from the Naval Hospital, Philadelphia, and ordered to the "Saratoga."

HIBBETT, C. T., *Passed Assistant Surgeon.*—Ordered to the "Franklin."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM OCTOBER 5 TO OCTOBER 19, 1889.

VANSANT, JOHN, *Surgeon.*—Granted leave of absence for fifteen days, October 16, 1889.

GOLDSBOROUGH, C. B., *Surgeon.*—Leave of absence extended thirty days, on surgeon's certificate of disability, October 18, 1889.

PERRY, T. B., *Assistant Surgeon.*—Ordered to temporary duty at San Francisco, California, October 15, 1889.

VAUGHAN, G. F., *Assistant Surgeon.*—When relieved, to proceed to Evansville, Indiana, for temporary duty, October 9, 1889.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, NOVEMBER 2, 1889. No. 18.

ORIGINAL ARTICLES.

THE USE OF ASCENDING DOSES OF NUX VOMICA, AS AN AID IN THE TREATMENT OF INSUFFICIENCIES OF THE OCULAR MUSCLES.

BY G. E. DE SCHWEINITZ, M.D.,

OPHTHALMIC SURGEON TO THE PHILADELPHIA AND TO THE CHILDREN'S HOSPITALS; OPHTHALMOLOGIST TO THE INFIRMARY FOR NERVOUS DISEASES.

IN recent years unusual care has been bestowed upon the study of the ocular muscles, and their relation to the production of headache, asthenopia, and reflex nervous disturbances has afforded the subject of many researches. The older tests for the detection of muscular troubles have been believed to be imperfect, and we have for use the ophthalmodynamometer of Landolt, the useful modification of this instrument by Alleman, the phorometer of Stevens, the method of Holden, the obtuse-angled prism of Maddox advocated by Randall, and the ingenious adaptation of Crêtes's revolving prism by Risley for measurement of the degree of discovered deviation. After lack of equilibrium in the ocular muscles has been demonstrated by any or all of these means, the important problem for solution consists in the proper method for the restoration of the disturbed balance.

Here, again, we have a variety of measures at hand, depending upon the degree and character of the defect—decentration of the correcting lenses, the use of prisms, tenotomy, combined or uncombined with advancement, and the method of "graduated" or "partial tenotomies" revived and advocated by Stevens, Ranney, Webster, Standish, and other surgeons. Perfectly aware of the fact that where high degrees of insufficiencies, especially of insufficiency of convergence, exist, surgical treatment is the only one which is efficacious, and also fully alive to the fact that, especially owing to the work of American colleagues, the correction of minor degrees of heterophoria by means of partial tenotomies has become more and more a satisfactory operative procedure, there are none the less a class of cases in which operation is either impossible, from lack of consent, or inadmissible owing to complicating circumstances. It is, perhaps, only necessary to refer to the instances of so-called neurasthenic asthenopia associated with great reduction in the amplitude of convergence, cases in which Landolt has so well shown that surgical treatment, without perhaps being entirely excluded, must be associated with general invigorating methods. It is in those cases, then, of muscular troubles in which an operation cannot be performed, or, having been performed, has proved insufficient, and in which the use of correcting lenses combined with prisms has failed to relieve the symptoms, that I wish to call attention to the relief that is afforded by the use of ascending doses of nux vomica.

Ophthalmic surgeons have long been accustomed to employ nux vomica or strychnia in the treatment of various forms of ocular disturbance. Since Nagel, in 1871, called attention to the value of strychnia in the treatment of nerve atrophy, it has been largely employed with varying degrees of success in the treatment of atrophy of the optic nerve. Nux vomica has been much used in forms of functional disturbance of the retina, associated with a lack of general bodily tone, in which at once a bitter tonic and stimulant to the trophic centres and a vaso-motor excitant were indicated. Naturally, weakness of the external eye muscles has called for its use, exactly as lack of tone in the general muscular system has always been one of its most important indications. It is not the purpose, therefore, of the cases which follow to show any new use for the drug, but only to describe a method of administration which has proved successful in my hands.

CASE I.—Private patient, female, æt. twenty-one. Painful eyes; supra-orbital neuralgia; violent frontal and occipital headache; general health good; no lesion of the fundus; refraction error a compound hypermetropic astigmatism; insufficiency of the internal recti of seventeen degrees in the act of accommodation, and five degrees at five metres. Correction of the refraction error afforded partial relief, but the headaches returned when any close application with the eyes was practised. Ascending doses of the tincture of nux vomica were begun as follows: Ten drops three times a day, to be increased on succeeding days by one drop at each dose until some physiological action of the drug was manifest.

When the dose had reached twenty-five drops three times a day, eye-tire had greatly lessened. At thirty-five drops three times a day the headaches had ceased, although the occupation of the patient was that of a school-teacher. The remedy was pushed until forty drops were taken three times a day, then gradually decreased to twenty-five drops, and finally discontinued, with the direction to renew the remedy should headaches reappear under the stress of work. The amount of insufficiency varied; the lowest that it reached was ten degrees. Prisms were never used.

CASE II.—Private patient, male, æt. twenty-two. Exceedingly nervous, and the subject of occasional attacks of hepatic congestion; marked asthenopia; pain in the eyeball; frontal and occipital headache; in the fundus of each eye slight retinal haze, otherwise no changes; myopia of one dioptry; insufficiency of the internal recti of eighteen degrees in accommodation and eleven degrees at twenty feet. Adduction three degrees; abduction eleven degrees. Nux vomica, in the method already described, was employed, and under its influence a severe winter of work was successfully undertaken, during which the patient was practically free from headaches, using at the same time three-degree prisms with their bases toward the nose. The prisms alone failed to give relief, but the prisms with the nux vomica were successful.

CASE III.—Private patient, female, æt. nineteen. In good general health, but somewhat mentally depressed owing to domestic troubles; blurred vision during reading; eyes easily tired; severe frontal headache aggravated by all near work. The refraction a simple hypermetropia; insufficiency of the external recti of eight degrees. Correction of the refraction error produced almost entire relief for a number of months, then the headaches returned and were stubbornly present for a long time. Under the use of nux vomica they speedily improved. The maximum dose was thirty-five drops three times a day. The insufficiency through the correcting lenses became as low as three degrees.

CASE IV.—Private patient, female, æt. thirty-four. In poor general health; of gouty ancestry; had recently recovered or partially recovered from pelvic peritonitis; was the subject of the most atrocious occipital headaches occasioned by any use of the eyes. The refraction a compound hypermetropic astigmatism. Insufficiency of the internal recti of twelve degrees. The use of the correcting lenses, together with prisms, afforded some relief, but eye-work instantly brought on the headache. During a period when it became absolutely necessary for the patient to use her eyes at sewing and similar work, ascending doses of nux vomica, while they failed to give the relief recorded in the previous cases, lent sufficient aid to enable the work to be performed. During a similar necessary period of eye-work on another occasion, without the use of nux vomica, the patient had a complete eye-breakdown.

CASE V.—Private patient, male, æt. thirty. In good general health; occasional attacks of blurred vision; some asthenopia, and now and then severe orbital neuralgia. Refraction error a simple astigmatism. Insufficiency of the internal recti from eight to ten degrees. During certain seasons of the year this patient is obliged to perform much night-work, during which time the supra-orbital neuralgia has usually been much aggravated in spite of the use of prisms. Ascending doses of nux vomica have never failed to give marked relief, so much so that it is with difficulty that he is persuaded during the administration of the drug to make use of any optical therapeutics. The maximum dose has on a number of occasions been fifty drops. The usual dose is thirty-five drops.

CASE VI.—Private patient, female, æt. twenty-three. A slender woman in delicate health, a school-teacher by profession; aggravated asthenopia; occipital headache; occasional attacks of migraine. Refraction error a compound hypermetropic astigmatism; no disease of the fundus; slight haze of the retinas. Insufficiency of the internal recti of ten degrees. The usual treatment with nux vomica has been productive of much relief, enabling the patient to perform long periods of eye-work with comparative comfort. The maximum dose was twenty-five drops; beyond this point there was production of disturbance of the alimentary canal and wakefulness at night. Although the comfort of the patient was increased by the use of the drug, no lessening in the amount of the insufficiency was observed, nor was the relief from headache perfect.

CASE VII.—Private patient, female, æt. forty. A florid woman, but with flabby muscles; easily tired; much headache; eye-pain and inability to perform any lengthy work requiring tension on the accommodation. The refraction a simple hypermetropia of one dioptry. No disease of the fundus except a slight patch of old choroiditis in the nasal half of the left retina. Insufficiency of the internal recti of eight degrees. Ascending doses of nux vomica, the maximum dose being twenty-five drops, beyond which amount the drug produced great restlessness and some nausea, greatly increased the eye-comfort and improved a very troublesome symptom, namely, an appearance as if the lines on a printed page were broken.

CASE VIII.—Private patient, female, æt. nineteen. Of large frame and fine proportions, but intensely nervous, at times hysterical, and subject to intervals of great mental depression; much headache, chiefly in the morning and usually in the occiput, sometimes above the brow. Inability to read for more than a few minutes at a time without great aggravation of the symptoms just detailed. Refraction error a slight compound hypermetropic astigmatism. Insufficiency of the external recti of six degrees; the fundus of each eye reasonably healthy. Her symptoms were practically unrelieved by the use of correcting lenses and prisms. All manner of general treatment was tried with but indifferent success. Finally the use of nux vomica, in ascending doses, was followed by surprising improvement. No lessening in the degree of the insufficiency was detected, but the relief to the eyes was evident and gratifying. The maximum dose was forty drops, without the development of any unpleasant symptoms.

These eight examples will suffice to show the class of cases in which this remedy thus applied has proved useful. I could quote many others with similar results. I could also quote instances which, under apparently exactly similar circumstances, have not been benefited by the drug. The method of using nux vomica in this manner was suggested to me by the paper of Dr. John H. Musser.[1] In his experiments,

[1] Therapeutic Gazette, vol. ii., 1886, p. 9.

in which he desired to demonstrate the influence of age on the dosage of nux vomica, he came to the conclusion that the effect of the drug was in inverse proportion to the age of the patient; the susceptibility increased with the age. The manner in which Musser administered the drug was to give ten drops three times a day, and increase three to five drops every second day until some physiological effect was produced. That very full amounts of the remedy can be safely employed in this way is attested by the fact that one of his patients took 200 drops three times a day, and between the ages of fifteen and forty forty-five drops were well borne. It may with perfect reason be asked, What is the use of giving large doses of an exceedingly bitter tincture, when the equivalent amount of its active principle could be gained by the administration of a small granule of strychnia, five minims of a good tincture being equal to $\frac{1}{200}$ grain of strychnia? I have often employed strychnia in precisely similar cases, and it has not seemed to me that the same satisfactory results were obtained. The nux vomica in this class of cases, in the form of the tincture, seems to act somewhat analogously to the use of Fowler's solution in ascending doses in chorea and anæmia. At all events, the clinical fact remains that under this method of administration, distinct improvement in asthenopia and headache occasioned by ocular insufficiency, especially in neurasthenic cases, is distinctly manifest, precisely as it improves the general tone of the muscular system, aids digestion, and corrects the action of the alimentary canal. One very curious fact which I have observed, is that it never seems to do good if the insufficiency exists in the vertical muscles. As an example of this I may quote the following case:

Private patient, female, æt. twenty-nine. A highly nervous woman, a school-teacher by profession; the subject of menstrual disorders and atonic dyspepsia. The two latter difficulties were greatly improved after a course of regulated diet, tonics, and dilatation of the cervix of an anteverted uterus. She was the subject of the most aggravated asthenopia. All manner of glasses had been prescribed without avail. Occipital headache was constant; reading, sewing, and similar occupations had become impossible. The refraction was a low compound hypermetropic astigmatism. There was an insufficiency of the superior recti of three degrees—right hyperphoria of Stevens's classification. Decentration of the lenses, and prisms were productive of no benefit (operation was declined). The persistent use of nux vomica signally failed to give relief.

This is not a single example on which I base my opinion that the use of this drug will not be found to be of value in the treatment of the various forms of hyperphoria. I have tried it in a number of cases, and it never had one particle of effect, unless, perhaps, the good of a bitter tonic upon the stomach.

Another point of interest in the administration of nux vomica and of strychnia, for this and for similar purposes in disturbances of the eyes, is the condition of the retina. It is a well-known fact that irritations of the nerves contraindicate the use of full doses of nux vomica or its alkaloid. It is a therapeutic law which must not be broken, that this drug should not be administered in paralyses from cerebral hemorrhage until all irritation produced by the clot has passed away. On precisely the same principle, nux vomica and strychnia are contraindicated in ocular insufficiencies associated with headaches, if at the same time there is much retinal irritability, characterized by dread of light, manifest haze and thickening of the fibre layer, and the presence of numerous lymph reflexes throughout the eye-ground. I have more than once not only not seen the drug relieve the patient, but distinctly aggravate the headache. This was beautifully illustrated by the following case:

Private patient, female, æt. ten; very anæmic; of rapid growth; much headache, worse during school hours. The refraction was a simple hypermetropia. There was a slight insufficiency of the internal recti, and marked retinal irritation sufficient to produce decided photophobia. This somewhat subsided under the prolonged use of atropine and afterward of the correcting lenses, but still remained, and the headaches failed to disappear. The child had long been taking a tonic from her family physician. Upon investigation this was found to contain very full doses of strychnia, the exact amount of which I am unable to state. When this was discontinued and simply iron substituted, the headaches rapidly disappeared, and, so far as I am aware, they have never returned.

This is not a mere coincidence, for I have over and over again tried the experiment in patients who had markedly irritable retinas, and have always succeeded, when I pushed nux vomica, in aggravating their pain.[1]

In conclusion, I would say that in those cases of ocular insufficiencies affecting the lateral muscles, where surgical interference is either impossible or contraindicated, where the use of correcting lenses and prisms has not been sufficient, and where the retina is quiet and dread of light is absent, ascending doses of a good tincture of nux vomica

[1] I have heard my colleague, Dr. B. Alexander Randall, bring out this point with much force in a discussion in the Neurological Society some years ago, during the presentation of the subject of Tobacco Amblyopia, contrasting the remarkable facts that on the one hand irritations of the optic nerve and retina were usually aggravated by the use of strychnia, while on the other, when tobacco was the poison which had produced an axial neuritis, this was speedily and often remarkably relieved by the administration of the drug.

will afford, in most cases, marked relief. If the method be tried, the drug must, however, be pushed up to its full physiological effect, and, according to the experiments of Musser, between the ages of fifteen and forty, a dose of forty-five drops will readily be borne. In fact, very much larger doses, if watched, may be administered without hesitation.

A PORRO-CÆSAREAN SECTION,

Rendered Necessary by a Deformed Pelvis, and a Uterus Enormously Enlarged by Fibroid Growths; Together with a Cyst of the Right Broad Ligament.

BY JOHN J. BLACK, M.D.,
OF NEW CASTLE, DELAWARE.

IN April, 1889, Dr. Benjamin B. Peters, of Christiana, New Castle Co., Delaware, sent Sarah T——, colored, aged twenty-seven years, to me, requesting that I should examine her, and give my opinion as to the condition present, at the same time informing me that he was sure she had had for some time an abnormal growth in the abdomen, and in addition that he thought at the present time she was very likely pregnant. Sarah was mentally a bright woman of her class, and full of vim and pluck, unmarried, and apparently much distressed over her fears of becoming a mother, although she said, "She knew she had had a lump in her stomach for several years." She was a markedly deformed woman, very short in stature, with the peculiarly developed head of a dwarf, very long arms, a fairly developed body down to the pelvis, but from thence down much distorted and out of shape. Her thighs and legs were very much bowed, very short naturally, and there was very little motion in the right hip-joint; not from its being defective, but from distortion about the upper part and neck of the femur. The case was one in every respect typical of rickets. She had a brother even more deformed than herself, and two sisters more or less deformed, one of whom, Dr. F. L. Springer, of Christiana, informed me he had delivered, several years previously, after craniotomy.

The father and mother were both large, and, physically, fine specimens of their race, and no suspicion of deformities could be traced in their ancestors. An examination of Sarah showed a considerable abdominal enlargement, somewhat larger to the right of the median line and having a somewhat nodulated feeling lower down to the left. Palpation over the prominence showed the presence of fluid. Vaginal examination told me little, as I could not reach the os uteri, and it at once became evident that I had a seriously deformed pelvis to deal with. I could not hear the fœtal heart, and she had felt no motion, but acknowledged it was possible she might be pregnant, as she had not menstruated since the preceding November.

From rational and clinical signs I believed there was abnormal growth or growths in the abdomen, and agreed with Dr. Peters in his suspicions of pregnancy. Shortly after her visit to me I made an appointment with Dr. Peters, and examined her critically as to the condition of her pelvis, at her home, with a view to the treatment of her condition. I soon found out the extreme nature of the deformity, and the utter impossibility of delivering her of a living child by inducing premature labor, at the viable period, or even by craniotomy—the space was so contracted. Dr. Peters and I could only introduce two fingers through the inferior strait, and could make no satisfactory examination of the os. My hand is small, but I could by no means force it into the vagina.

The right limb could not be sufficiently moved to give good working space to the outlet of the pelvis. The arch of the pubes was very narrow, scarcely admitting two fingers, the symphysis was depressed, and the promontory of the sacrum was encountered when the fingers were introduced, giving at first the sensation of the presence of a child's head. I doubt if there was more than one inch in the antero-posterior diameter.

From the condition of the uterus, enlarged as it was by the fibroid masses, it was impossible for a fœtal head to engage in the superior strait.

The condition of affairs was stated to the patient and to her mother, and they agreed to let us do all we could to save her and her child. We could propose nothing short of a gastro-hysterotomy.

Monday, August 19, 1889, I was summoned to the case by Dr. Peters. I found the woman in labor, and, unfortunately, before I could get to her residence, the waters had come away, thus probably rendering the extraction of the child from the uterus a little more difficult. The woman was in fair condition and good health, as far as her kidneys and other organs were concerned. After consultation with Dr. Peters, Dr. Francis L. Springer, of Christiana, and Dr. R. R. Tybout, of New Castle, we decided to perform the Cæsarean operation and treat, as we went on, any complications that might arise. The fœtal heart could be heard and a left vertex presentation made out, externally.

Dr. Peters kindly took charge of the anæsthetic—chloroform—while Drs. Tybout and Springer gave me direct assistance. Antiseptic precautions were used in every detail, from the beginning to the end of the case. After putting the abdominal surface in proper condition, I at once made an incision from the navel to near the pubes, incising the parts as they appeared, and on opening the abdomen a cyst at once came into view. With a towel (antiseptic) around the wound, the cyst was evacuated of a straw-colored fluid. The uterus now came into view—a large, interstitial fibroid mass extending from above the centre down the left wall to the neck. Over the surface were also numerous fibroid nodules. A large fibroid mass was felt behind, along with several smaller nodes. The very serious nature of the case now became apparent. I prolonged the abdominal incision above the navel to the left, and then at once opened the uterus through the fibroid masses. The hemorrhage was terrific, but we kept the blood from entering the abdominal cavity as much as possible by towels held by Drs. Springer and Tybout. After the incision into the uterus was sufficiently large, I introduced my hand, and felt first the child's

head, but the waters having been evacuated the walls of the uterus tightly clasped it. I seized first one foot and handed it to Dr. Springer, then I seized the other foot and gave it to Dr. Tybout, and they at once dexterously delivered a large, male child. The cord was wound tightly around the neck three times, and the child was in a condition of asphyxia. It was given in charge of Dr. Tybout, who, by skilful manipulation, soon had it restored and crying lustily. In the meantime Dr. Springer had grasped the uterus around the neck and checked the hemorrhage. I at once delivered the placenta and turned the uterus completely out of the abdomen, and constricted it at the neck by a piece of rubber tubing, thus controlling all bleeding. The woman was in good condition, and had the uterus been normal, by Sänger's method I believe we could have saved both mother and child without trouble. The mass could not, however, be sewed up and returned into the abdomen; the patient would never have rallied, and the hemorrhage could not have been controlled; the only thing was to separate the mass and extirpate it.

The remains of the cyst were found about the right broad ligament, and there was a small cyst of the same kind, the size of a hen's egg, about the parovarium on the left side. We ligated with silk, and separated the round and broad ligament and attachments on either side, and cut the ligatures short, carefully lifting the bladder from the uterus (the first having been emptied by a catheter before the operation) and applied the serre-nœud, expecting at least to constrict the neck sufficiently to check hemorrhage and allow us to take away the rubber tube, and then treat the pedicle in the lower angle of the wound. I soon found to my sorrow that the screw-threads slipped, and the wire would not hold sufficiently even as a constrictor, and as I was utterly without resource as to other instruments, there was nothing left to do but to ligate the part, which we did—fortunately finding a strong hemp cord in the house. After ligation I removed the whole organ, tumors and all.

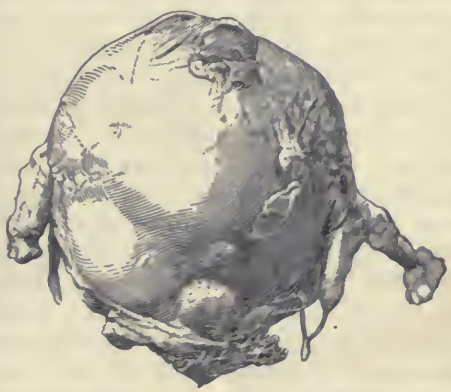
There was no hemorrhage or further trouble. The child and the ablated mass weighed eight pounds. The abdomen was closed by catgut in the usual manner, after having been cleansed and sponged thoroughly dry. The ligature was brought out the dependent angle of the wound, and antiseptic dressings and bandages were applied. The woman was now quite weak. A syringeful of fluid extract of ergot and a number of syringefuls of whiskey were injected into the outer parts of the thighs, and she was put to bed, with warm blankets, etc., around her. The child was now in a very satisfactory condition, just as much so as though he had been born by an easy birth *per vias naturales*. We then and there named him Cæsar Trippet.

We found, on examining the pelvis, that the deformity was fully as much as had been expected, and its condition and that of the uterus would have probably demanded delivery by other than the natural way at any period of the pregnancy. If the uterus could have contracted sufficiently to expel the child, I doubt if it could have so contracted as to prevent the mother dying from post-partum hemorrhage.

As to the time of election for the operation, the old mother was superstitious and very peculiar, and the only election we had was to await the coming on of the symptoms of labor. Up to this point we had done all we could for this unfortunate patient, and now we were compelled to leave her without the care of any one skilled in nursing or attention to the sick. The only intelligent care she did receive was what her physicians were able to give her in a house destitute not only of the luxuries but even of the necessaries of life.

The bladder was relieved regularly by Dr. Tybout, and the contents, when evacuated, showed this viscus to be intact. Her diet was chiefly milk, with stimulants as required, and opium to control the bowels and any irritation that might arise. The next morning she was lively and joking, and remarked to me that it was the "fust time" she had seen her feet over her belly for a very long time.

Her pulse was 95, and her temperature 100°. She had not vomited or complained of nausea; had some appetite, and no abnormal thirst, and her countenance was not serious. In the afternoon of this day her pulse and temperature began to go up, and Dr. Tybout removed the dressings and examined the wound and the adjacent parts. All were in good condition. There was no very marked tympanites. Soon after this, irritability of the stomach came on, which increased until the time of her death, at 9 P.M. of the third day after the operation, from exhaustion.



Posterior view of uterus showing fibroids.

I have found no such case as this on record; here is not only a Cæsarean section, but a Porro-Cæsarean section, complicated by the existence of an ovarian cyst, or rather a cyst of the broad ligament, from either one of which a fatal result might follow. The only case I can find on record approaching it is that in which Dr. Horatio R. Storer, in 1869, performed the Cæsarean section to remove a dead fœtus—a fibro-cystic tumor filling the pelvis. After incising the uterus, the hemorrhage was so alarming that he ligated the cervix, and removed the uterus with the écraseur. The patient died.

Dr. Emmet says, in his *Principles and Practice of Gynecology*, edition of 1884, p. 579 *et seq.*: "To remove the uterus when enormously enlarged from a

fibroid growth is unquestionably one of the most formidable operations a surgeon can be called upon to undertake. The degree of success which has so far attended the operation offers but little encouragement for the future. Seeing the results of the operation in this country, no surgeon is justified in attempting to remove the uterus for the growth of a fibrous tumor, except as a forlorn hope." Such being the opinion of one whose authority is so unquestioned, how much more of a forlorn hope was the case I have reported!

NEW CASTLE, DEL., September, 1889.

Dr. Robert P. Harris, of Philadelphia, has kindly added the following remarks: "This operation of Dr. Black deserves a special notice, from the fact that it was the first Cæsarean section ever performed in the State of Delaware. That death should have followed it is not to be wondered at, when we consider that the subject was a rachitic dwarf, with a collapsed pelvis; and that her case was rendered far more serious by reason of the abnormal state of her uterine tissues. Women with uterine fibroids have been saved under the old Cæsarean, Porro-Cæsarean, and new Cæsarean sections, it is true; but the proportion has been very small, compared with that of the cases in which the uterine tissues have been free from disease. The Porro method can rarely be employed with advantage in cases of obstruction by uterine fibroids, because of the fact that the cervix is generally involved in the disease itself; and in the new Cæsarean the degeneration of tissue to be sutured is a serious obstacle to a satisfactory closure and an early union. Two Sänger and two Porro cases in Philadelphia, all fatal, attest the risk to life in operating on parturient women with obstruction by fibroids. There have now been performed, in all countries, 269 Porro-Cæsarean operations, with 122 deaths; the record of our own country is 11 cases, with 8 deaths—a higher mortality than any European country, except Scotland, which has lost 4 out 5; Austria has saved 43 out of 61. Germany has lost only 13 out of her first 98 Sänger cases."

A CASE OF CHRONIC PURULENT DISCHARGE FROM THE EAR, WITH DEAFNESS, CURED BY EXCISION OF THE MEMBRANA TYMPANI AND MALLEUS.

BY CHARLES H. BURNETT, M.D.,
AURAL SURGEON TO THE PRESBYTERIAN HOSPITAL, CONSULTING AURIST TO THE PENNSYLVANIA INSTITUTE FOR THE DEAF AND DUMB, LECTURER ON OTOLOGY IN THE WOMAN'S MEDICAL COLLEGE, PHILADELPHIA.

IN a paper on "Purulent Inflammation of the Tympanic Attic," read at a special meeting of the American Otological Society, held in Washington, September 18, 1888,[1] in speaking of the treatment of this disease of the ear, I said, in referring to the comparative uselessness of all means of treatment heretofore used in this disease, and of the encouraging results promised by excision of the membrana, "although I have not yet performed such an operation for the *relief of this disease*, I feel sure that hereafter I can obtain a radical cure most surely by this means—and perhaps not at all by any other—and I am prepared thus to inform my patients, as this form of purulency of the middle ear, from its proximity to the brain, is the most threatening to life, and demands a careful consideration of every means for its radical cure."

Case XX., alluded to in the aforesaid paper as then under treatment, remained under treatment a year without being cured, and forms the subject of the present paper. The notes of the case are as follows:

July 14, 1888. Miss M., aged twenty-three years, states that in her childhood her tonsils were enlarged: excision of these was soon followed by some earache and dulness of hearing in both ears; but these symptoms soon passed off and were forgotten, excepting that, she thinks, the right ear, the now suppurating one, has never heard sharply. Six years previous to the time of her first consulting me, suddenly, without any pain or warning of any kind, the right ear felt stopped. Examination by her physician at that time revealed the presence of a polyp, the precise location of which cannot now be stated. The polyp was removed. Since then, off and on, there has been a constant, slight, but offensive purulent discharge from this ear—hardly enough to flow from the meatus, however. In the meantime numerous polypi have been removed, probably from the region of the perforation in the *membrana flaccida*, by surgeons in this country and in Europe, but no permanent relief has followed these operations.

The hearing was found, at the above date, to be practically nothing in the affected ear. Examination revealed the *membrana vibrans* to be intact, retracted, white, dry, and shining and a *large perforation in the membrana flaccida*, or Shrapnell's membrane, through which the white neck of the malleus could be seen, and from which a slight, scanty, offensive discharge came.

Treatment.—The attic was syringed with peroxide of hydrogen and then with a 2 per cent. solution of carbolic acid, by means of Blake's tympanic syringe. At the second syringing a small polyp was brought to view, attached to the inner edge of the perforation, and which had been concealed in the attic at the time of the first examination. This was removed with slender forceps, after which the discharge seemed less. During the subsequent two months the patient wiped out her ear every second day with absorbent cotton, this being sufficient to keep it clean, and sometimes mopped it out with a 2 per cent. carbolic acid solution.

By September 1st there was found to be a minimum discharge—some days none at all. At this time peroxide of hydrogen failed to make the char-

[1] New York Medical Journal, November 24, 1888.

acteristic foaming, and it was concluded that no pus was in the attic. A small granulation was removed from the edge of the perforation, and the attic washed out with a 2 per cent. solution of carbolic acid, by means of the tympanic syringe inserted through the perforation in the flaccid membrane.

This form of treatment, by means of injections of peroxide of hydrogen, carbolic acid solution, and alcohol into the attic once, twice, or three times a week, was kept up for a year. Between the treatments in my office, the patient instilled into her ear, once daily, peroxide of hydrogen, and followed it by instilling alcohol or carbolic acid solutions. While the discharge became extremely small in quantity, and no more granulations or polypi formed at the perforation in the membrana flaccida, the discharge did not cease, and there were several attacks of acute otitis externa, with some pain, usually quickly relieved by applying a few drops of a 20 per cent. solution of ichthyol to the affected ear. *But the ear did not get well*, as the discharge still continued, though small in quantity. The hearing in the affected ear was *nothing*.

Being convinced that the disease in the ear was due either to defective drainage or the continued presence of diseased tissue in the attic, which injected solutions could not reach, or if they did reach, could not cure, I resolved to excise the membrana tympani and the malleus, in order to secure access to the diseased parts; to remove them, if possible, and, in any event, to secure ample means of direct medication to and drainage from the walls of the attic. Accordingly, on July 29, 1889, the patient was etherized, and under illumination of the auditory canal, by means of the electric head-lamp, the membrana tympani and the malleus were excised. The head of the malleus was found half destroyed by necrosis on its free surface, its articular surface with the incus being normal. The other auditory ossicles and the walls of the attic and atrium were entirely normal. Here, then, was the cause of the incurable purulent discharge from the attic. The ligaments at the neck of the malleus were very tough and broad, and had acted as a diaphragm between the attic and the atrium below, and also as the floor of a sinus running from the diseased malleus head and the perforation in the membrana flaccida.

The steps of the operation of excision consisted in :

1. An incision behind the short process, with a slender curved blade.

2. Through this initial incision a round-pointed blade, curved in the plane of its broad surface, was introduced, and being kept close to the manubrium, below the insertion of the tendon of the tensor tympani, was pressed upward against the latter, and the tendon thus severed.

3. Then a straight blade, with rounded blunt point was used to cut around the membrana tympani in the annulus tympanicus, thus entirely detaching it, and severing the hammer ligaments at the neck of the bone.

4. Instead of forceps, the polypus snare was now used to seize the malleus, being passed around the manubrium, and the malleus with the membrana tympani were removed from the ear.

The slight hemorrhage was controlled by mopping the fundus of the ear with a four per cent. solution of cocaine muriate. During the operation the fundus of the ear was mopped frequently with a two and a half per cent. solution of carbolic acid. After the operation the meatus of the canal was lightly tamponed with cotton sprinkled with iodoform, and left in place for twenty-four hours.

The next day the patient went about the house. The cotton tampon was slightly discolored on its inner end with a pinkish serum. There was no purulent discharge, and there has not been any since the operation, nearly three months ago.

The iodoform tampon in the auditory canal was discontinued in four or five days, and one containing powdered boric acid sprinkled over it was substituted, and worn for a week longer. Then simply a little cotton pellet was worn in the meatus, in the open air, to protect the exposed tympanic cavity. On some days the tampon was a little moistened with a serous fluid, but this soon ceased to appear. The absence of any reaction, and the tendency to rapid healing in this case, I am disposed to attribute largely to the antiseptic measures during and after the operation.

August 12. There was now no discharge of any kind from the ear. The hearing was found to be a little improved; about a foot for loud words.

19th. Still no discharge. The mucous membrane of the promontory is pale and rough, but entirely dry. The region of the membrana flaccida is narrowing. Hearing equals a whisper at six inches.

The patient now went on a tour to the Adirondacks, *free, for the first time in seven years, from the annoyance of a running from the ear, and the care it demanded.*

The patient was not seen again until September 25th, when it was found that a new membrane had formed from the segment of Rivinus, the region of the membrana flaccida, down to the promontory. There was no discharge. The hearing was, for whispered words, two to three feet.

October 11. The delicate membrane, bluish and transparent, rises and falls under gentle suction with the pneumatic speculum. The hearing was *nine fee* for isolated words in ordinary conversational tone.

Here, therefore, is offered an account of a case of chronic purulency and deafness, caused by necrosis of the head of the malleus, and altered tension and conductivity in the ossicles, cured of the discharge and the deafness by excision of the useless membrane and a necrotic malleus. The cure of the purulency is easily explained, but the improved hearing is not as easily explicable. I venture to suggest that the conducting power of the ossicles was interfered with by the presence of pus about the ossicles in the attic, and by the pathological bands about the malleus already mentioned, which prevented ready vibration. Also the diseased condition of the head of the malleus loosened its articulation with the incus, and impaired its leverage on the latter. Hence, a wave of sound falling on the membrana and malleus could not

transmit its inward oscillations to the incus, and thence to the stapes and the labyrinth.

When the membrana tympani and the necrotic malleus-head were removed from the attic, waves of sound fell directly upon the incus and the stapes, and were conveyed to the labyrinth. As the new membrane formed, its expansion offered a broader surface to the waves of sound, and possibly helped to increase their leverage on the remaining ossicles, thus transmitting more sound and increasing the hearing. The continuance of this normal stimulus to the movements of the stapes in the oval window gradually overcame the partial ankylosis which had ensued at that point from disease, and the hearing, in consequence, has *steadily improved*, since the operation, from nothing to *nine feet*.

Let us suppose that the chronic purulency of the attic had been, or could have been, cured by injections through the perforation in the membrana flaccida into the attic cavity. The hearing would not have been improved, because the impaired malleus-head, the stiffened ossicles, and the pathological bands around the neck of the malleus would not have been removed, and hence the impaired mobility of the incus and stapes would have still remained as a hindrance to hearing.

We see, therefore, that the operation of excision of the membrana tympani and the malleus offers not only a great hope of curing chronic purulency, especially of the attic, but also of relieving deafness due to a stiffened membrana and ossicles, by the removal of pathological bands prohibiting free oscillations in the ossicles, and by thus permitting sound-waves to fall directly upon the stapes in the oval window, and perhaps also upon the membrana tympani secundaria.

The gradual improvement in the hearing in this case, as has been observed by Sexton in other cases, is worthy of note, and would seem to indicate, as suggested above, that the deafness, in many instances, is due to a quasi-ankylosis in the ossicles, especially in the stapes, and that when this bonelet is exposed by the operation to the direct action of sound-waves, the passive motion thus brought to bear on the ankylosed structures renews their ready vibratility, and the hearing is improved to a greater or less degree.

OSTEOTOMY FOR OVERLAPPING UNION OF A FRACTURE OF THE FEMUR.

BY ERNEST LAPLACE, A.M., M.D. (PARIS),
PROFESSOR OF PATHOLOGY IN THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA; LATE VISITING SURGEON TO THE CHARITY HOSPITAL OF NEW ORLEANS.

AMONG the great advances of surgery made possible by the strict application of antiseptic measures are the operations on bones. Deformities such as would, no doubt, have been abandoned some years ago, are to-day remedied with the greatest ease, restoring, as in the following case, the perfect use of a limb which, owing to its deformity, the patient wished to have amputated.

W. K., aged forty years, entered the Charity Hospital, in New Orleans, presenting the following history: He had had an attack of acute articular rheumatism about one year previously, as a result of which his right knee had become ankylosed in a semiflexed position, necessitating his using crutches. Three months afterward he fell and broke his right thigh, and the treatment having been somewhat neglected, solid union took place in the following abnormal position. The ankylosed and flexed knee was everted, and there was an overlapping of the fractured ends of the femur to the extent of fully six inches. There was also a large tumor, consisting of callus, around the overlapping fragments, so that the limb was a great encumbrance to the patient, who came to have it amputated.

Instead of this we had recourse to osteotomy. The patient being anæsthetized, and the parts having been rendered thoroughly aseptic, an incision eight inches long was made on the external surface of the thigh, extending to the bone, directly over the overlapping fragments. The Esmarch elastic bandage having been previously applied, we were not troubled with hemorrhage. After having exposed the overlapping portions of the bone, they were entirely separated with hammer and chisel. The ends of the fragments were likewise denuded. This being done, the wound was thoroughly washed with the acid sublimate solution,[1] and then packed with iodoform gauze, and a stout bandage applied around the thigh. Forcible extension was made about the knee-joint, destroying the fibrinous ankylosis, and straightening the joint. The patient being still anæsthetized, forcible extension was continued, and in about fifteen minutes the limb had been brought to measure the same length as its fellow. When this point was reached, the limb was put up in a Liston's splint, with a weight and pulley extension apparatus.

During the first twenty-four hours after the operation, considerable oozing took place from the wound. The dressing was removed, and the hemorrhage found to come directly from the chiselled bone; the wound was again packed as before. But the patient had lost so much blood that it was thought wise to resort to transfusion. For this purpose sixteen ounces of the following solution were injected into the median basilic vein of the left arm:

Sodii chloridi	℥ j.
Potass. chloridi	gr. x.
Sodii sulphat.	gr. jss.
Sodii phosphat.	gr. iij.
Sodii carbonat.	gr. vj.
Aquæ destill.	℥ xxiv.

Prior to its use, this solution was boiled, and allowed to cool to 98½° F.

Half an hour after the injection the patient was very much better; his pulse became firm and regular. Stimulants were also administered. From this on, improvement was rapid. Appetite increased; no

[1] Saure Sublimat-Lösung als disinficirendes Mittel, etc., by Dr. Ernest Laplace. Deutsche med. Wochenschrift, 1887, No. 40.

fever was present, and no suppuration from the wound. The dressing was changed twice, so as to make room for granulation from below. Forty days after the operation the patient left his bed, there being no perceptible difference in the length or appearance of the two thighs, except the line of incision for the operation. Massage and passive motion restored considerable motion to the once ankylosed knee. To-day the patient goes about with almost as sound a limb as he possesses in the unaffected one.

From this case we learn that:

1. With antiseptic precautions, the operation for deformities even as extensive as this was, should be attempted.

2. That a proper management of the case will restore the limb to as great a degree of usefulness as it ever had.

3. That should an unavoidable and profuse hemorrhage endanger the patient, transfusion as it was used in this case will materially improve the condition of the patient, putting him in better condition to rally from the injury.

HOSPITAL NOTES.

CARCINOMA OF CERVIX; CARCINOMA OF LIVER.

Abstract of a Clinical Lecture
Delivered by Matthew D. Mann, M.D., at Buffalo, New York.

Case I.—This patient entered for operation, the diagnosis of cancer of the uterus having previously been made. There was a history of much pain in the case, which is not, according to Dr. Mann's experience, a frequent symptom of cancer of the cervix. Vaginal examination revealed the entire cervix and part of the vaginal walls to be an irregular mass of soft bleeding tissue, which is characteristic of cancer. Adenoma of the cervix grows from a more or less distinct pedicle, does not break down under the fingers or bleed so readily.

The patient was etherized in the dorsal position, the legs being retained in position by the apparatus of Dr. H. A. Kelly. Further examination discovered cancerous infiltration of the broad ligament, which, of course, precluded the possibility of a radical operation. With a sharp spoon as much of the growth as seemed safe was removed. Following this, the vagina was irrigated with an antiseptic solution, and packed with non-absorbent cotton, which previously had been soaked in a solution of hydronaphthol and alum, and sprinkled with iodoform. The following day this tampon was to be removed, and the raw surfaces covered with small pledgets of cotton soaked in a fifty per cent. solution of chloride of zinc. These should be covered with gutta-percha tissue, and to neutralize the excess of the caustic, the vagina be tamponed with cotton wrung from a solution of bicarbonate of soda. After forty-eight hours the tampon should be removed and followed by frequent antiseptic irrigation until the sloughs separate. If necessary the cauterization will be repeated.

Case II.—This case sought relief from an enlargement of the abdomen which had taken place during the last three years, and had been diagnosticated as an ovarian tumor. From her facies alone, Dr. Mann believed that she was not suffering from an ovarian tumor, in which opinion he was confirmed by further examination. The abdomen was greatly distended, and as the patient lay upon her back there was anterior flattening with bulging in the flanks. The entire enlargement was soft and uniformly yielding. On percussion there was tympany in front, and flatness at the sides, which is an important point in the diagnosis between free fluid and fluid confined in a cyst. Dr. Mann's diagnosis in this case then, was ascites from disease of the liver, kidneys, or heart, but which of the three could be determined with certainty only after drawing off the fluid. Subsequently the abdomen was tapped and about ten quarts of yellowish, but clear, serum drawn off. After this a tumor on the under surface of, and attached to, the liver was detected, which was considered cancerous.

MEDICAL PROGRESS.

The Treatment of Pertussis with Resorcin.—Dr. Justus Andeer reports quite remarkable results in the treatment of whooping-cough with resorcin. In a child of seven years, on the second day after resorcin was prescribed, there was great improvement in the symptoms, and sleep at night was much less disturbed. In ten days, the cough had disappeared. With five other children the effects were even more pronounced, all being cured within a week. An infant of six months with vomiting after each paroxysm of coughing, was relieved by the second dose, and in five days the cough ceased. In the latter case, Dr. Andeer used a one-half per cent. solution in sweetened water given from the nursing bottle. In the former cases, he gave a two per cent. solution in water, of which half a wineglassful was administered four times daily, with directions that part should be used as a gargle, the remainder swallowed. He does not think that inhalations, or painting of the pharynx, with this solution, possess any advantages over this simple method. —*Centralblatt für die medicinischen Wissenschaften*, October 5, 1889.

Methods of Rendering Sponges Aseptic.—Perren, in the *Revue Générale de Clinique et de Thérapeutique* for October 10, 1889, gives the following method for the preparation of aseptic sponges: They are to be pounded with a wooden mallet and afterward carefully soaked in plenty of pure water. Following this, the sponges are placed in a bath of hydrochloric acid of the strength of one per cent., in order to dissolve thoroughly calcareous particles, and when this is accomplished, they are inserted into a jar containing a solution of potassium permanganate, in which they remain six hours. For blanching they are submitted to the action of a solution containing bisulphite of soda in the proportion 150 grains to a quart of water. Finally, all these processes being completed, they are placed in one of the following solutions for preservation:

℞.—Carbolic acid	15 grains.
Alcohol	1½ drachms.
Water	1 quart.

or:

℞.—Thymol	15 grains.
Alcohol	1½ drachms.
Water	1 quart.

The Effects of Ergot after Confinement.—In order to determine the precise value of ergot in childbed, Dr. Pinzoni administered it to ninety-one lying-in patients, generally in the form of about two grammes of the powder daily. Seventy-nine similar cases were treated without ergot. After comparing the two series, he came to the following conclusions: Ergot has little or no influence on the temperature; at the most a slight rise is occasionally observed. It hastens the pulse a little, yet has no marked influence on the physiological retardation of the pulse observed during the first days after delivery. The physiological increase in the secretion of urine during the earlier days is favored by ergot. The involution of the uterus, according to Dr. Pinzoni's researches, is either totally uninfluenced or slightly retarded. The escape of the lochia remains normal when the drug is given; but clots, as universal experience has proved, are more readily expelled. The lochia seldom smell fetid when the ergot is taken. It delays the after-pains in primiparæ, and lessens them when they have already commenced. The secretion of milk is retarded and lessened, and sometimes completely suppressed. Ergot seems, in the belief of Dr. Pinzoni, to be a prophylactic against puerperal fever, and an indirect antiseptic agent. When infection has already taken place, it appears, on the other hand, to hasten the entrance of the virus into the circulation. Dr. Pinzoni's researches appeared in the *Bolletino delle Scienze med. Bologna*, series vi., vol. xx. —*Archives of Gynæcology, Obstetrics, and Pædiatrics*, October, 1889.

Pseudo-orchitis.—In *L'Union Méd. et Scient. du Nord-Est* for July, 1889, GUELLIOT, of Reims, gives an interesting account of this condition, which he asserts is produced by effort of such a kind as to cause a strain involving the cremaster muscle. The result of the effort may produce rupture of the spermatic vein, the effused blood being limited to the cord, and, perhaps, in addition, the epididymis. The symptoms of this state are characteristic in that they are generally on the left side, the pain is circumscribed in its intensity, while the presence of dilated veins, completely engorged, also acts as a diagnostic sign.

Cornutin in Uterine Hemorrhage.—DR H. THOMPSON has used cornutin extensively in various forms of uterine hemorrhage. According to Dr. Kobert's method, the remedy was administered either subcutaneously, in the following formula:

℞.—Cornutin . . . . . gr. ¾.
Water . . . . . ʒ ijss.
Mix, make solution, and add:
Hydrochloric acid . . . gtt. iv.

or in the form of pills:

℞.—Cornutin . . . . . gr. 1⅛.
Hydrate of aluminium . . grs. 46.
Add water and glycerine āā q. s. for twenty pills.
Dose, two or three pills.

The cornutin in solution generally is not to be recommended, as it becomes cloudy and unfit for use in a very short time. In weak or inefficient pains the use of this drug is not to be recommended, while in atonic hemorrhage or after abortion it is of great value. Especially rapid is its action in metrorrhagia and menorrhagia following endometritis, metritis, and inflammatory conditions of the uterine appendages. In two cases of menorrhagia the result of endometritis, from one-third to one-half grain of the drug, subcutaneously administered, produced intense lumbar pains followed by complete cessation of the hemorrhage within ten minutes. The influence of the drug lasted for two hours, after which another dose was necessary. In a case of very severe metrorrhagia caused by double ovarian tumors, two three-quarter-grain doses gave entire relief.

The average dose of this drug is from one-thirty-second to one-eighth grain subcutaneously, and from one-eighth to one-fifth grain by the mouth.—*Archives of Gynæcology, Obstetrics, and Pædiatrics*, October, 1889.

Treatment of Gastric Ulcer.—In a recent clinical lecture on gastric ulcer, Dr. Byrom Bramwell, in speaking of the treatment of gastric ulcer, insisted upon the importance of giving the patient as much food as is necessary for the purpose of nutrition, and the avoidance of all foods which irritate the inflamed and ulcerated stomach, and which produce pain or vomiting. Liquid food, and especially milk, fill these requirements, though the latter is sometimes not well borne, unless boiled or partially predigested with pancreatin. Half a teaspoonful, or a teaspoonful, of the liquor pepticus given immediately after a meal, is often useful in those cases in which it is not considered necessary to peptonize the food before introducing it into the stomach. In the severe cases in which peptonized foods disagree, the stomach should, for a time, be placed at absolute rest, and the patient fed *per rectum*. It is now well known that it is possible to support patients for long periods of time by means of nutrient enemata (milk, beef-tea, defibrinized ox blood) and nutrient suppositories. Nutrient enemata should be given in small quantities at a time, to insure their retention, and when the rectum becomes irritable, a few drops of laudanum should be added to every third or fourth enema. Potatoes, raw apples, meat, and pastry, are especially injurious. Tea also is bad.

The second indication is to administer remedies which will promote the healing of the ulcer. In ulcer of the stomach, as in every other disease, one of the great principles which should regulate our treatment is to remove the cause of the condition. Ulceration of the stomach is very frequently seen in chlorosis, and in such cases he has found arsenic in the form of Fowler's solution, with a teaspoonful of liquor pepticus (Benger's), a most valuable remedy. Bismuth and nitrate of silver are also very useful in the treatment of many cases of ulcer of the stomach. In others, where the pain after taking food is severe, a small dose of opium or morphia, given in the form of a pill, is of advantage. In cases where there is distinct tenderness on pressure, the application of a blister is often beneficial.

In treating ulcer of the stomach, it is necessary to attend to the condition of the bowels. Cascara, or castor oil, may be given when medicine is required; strong purgatives should be avoided.—*Studies in Clinical Medicine*.

Subcutaneous Saline Injections.—In the *Archiv f. Gynäkologie*, DR. MUNCHMEYER, of Berlin, reports his results in the treatment of anæmia by subcutaneous injections of saline solution. The solution was 0.6 per cent. of

common salt, and the results were satisfactory. The anæmia was in nearly all the cases the result of post-partum hemorrhage.

In ten further cases of extreme debility after laparotomy and other serious operations, a similar injection was without effect, owing, as was believed, to paralysis of the cardiac muscle from brown atrophy. It is just possible that death was hastened in some of these cases by œdema of the lungs. All cases of anæmic debility are not suitable for treatment, as the pulmonary circulation is readily overladen with fluid. In those cases of post-partum hemorrhage in which the injection was without result, it was probably because it was done too late. As the point for puncture, the infra-clavicular region was considered very suitable, being near the heart and offering the best chance for rapid diffusion of the fluid. Strong stimulants should be given previously, and the injection supported by hot packings and wrapping of the extremities in hot cloths. As used, the solution was always sterilized. Not more than a litre (thirty-five ounces) was ever injected; the range being between half a litre and a litre. The apparatus used consisted of a funnel, an India-rubber tube one metre long, and several needles, which are readily kept disinfected. The needles can be sterilized in a flame, and the tube by passing a five per cent. solution of carbolic acid through it. The physiological fluid should, of course, be passed through before puncturing. The fluid injected is to be dispersed through the adjacent parts by massage, and, if the lumps produced by the collections of fluid are too large, another spot may be chosen. The injection must be continued until a result is obtained. In the eight cases reported, success was achieved in, at the longest, three hours.

Dr. Pregaldioli recommends the subcutaneous injection of a solution of sea-salt in acute anæmia. He claims that this increases blood-pressure, and thereby stimulates the nerves. Acute anæmia causes death, not by want of oxygen, but by rapid sinking of the blood-pressure, which causes sudden anæmia of the nerve-centres. His experiments showed that the fluid injected into the cellular tissues (a six per cent. solution of sea-salt) was rapidly absorbed, and that it had no deleterious influence on the regeneration of the blood corpuscles. The quantity of fluid required was from half to two-thirds of the quantity of blood withdrawn.—*The Medical Press and Circular*, October 9, 1889.

Treatment of Seborrhœic Eczema.—According to the *Monatschrift für Dermatologie*, Dr. Unna's favorite formula for the treatment of seborrhœic and other varieties of eczema, is a solution of three drachms of finely powdered resorcin with an equal quantity of glycerine, in six ounces of alcohol, diluted with four times the quantity of water or chamomile tea. A thin layer of cotton-wool well moistened with the solution is applied, covered with some waterproof material, and fastened by a bandage. These applications are particularly useful when the treatment is prolonged, or when it is carried out by night. They are, of course, impossible in general eczema of adults, but not in that of infants. Dr. Unna describes an especially important effect following the application of resorcin, viz., a swelling of the epidermis, by which all painful fissures are healed in a single night. In order to insure healing, he advises that the skin should be anointed after the removal of the bandage, and that washing with soap should be avoided. A few people suffer from a resorcin idiosyncrasy, which necessitates the immediate cessation of this treatment, and the application of powder to the affected parts. This idiosyncrasy is, however, very rare, as he has only met with it ten times among two thousand cases.—*Therapeutic Gazette*, October 15, 1889.

Menthol in Pruritus.—Dr. Saalfeld uses the following formulæ in itching of the skin from various causes:

℞.—Menthol . . . . . gr. xx.
Alcoholis . . . . . f ℥ij.—M.

Or an ointment:

℞.—Menthol . . . . . gr. xl.
Olium olivæ . . . . ℥iij.
Lanolin . . . . . ad ℥ij.—M.

—*Provincial Medical Journal*, September 2, 1889.

Formula for Uterine Hemorrhage.—The *Revue de Thérapeutique* publishes the following formula for menorrhagia:

℞.—Extract. cannabis Ind. . . gr. vijss.
Extract. ergot. fluid. . . f ℥j.
Extract. hamamel. fluid. } . āā f ℥ss.—M.
Tinct. cinnamomi }

Signa.—One teaspooful three times daily.—*The Canadian Practitioner.*

Operative Treatment of Bunion.—Dr. George R. Fowler recently operated after Peterson's method for severe bilateral bunions. As this disease is so painful to the patient, and troublesome to the surgeon, we append a description of the operation, which, in Dr. Fowler's case, was eminently successful: An incision was made from a point on the dorsum of the foot, somewhat below the level of the head of the first metatarsal bone, and just outside of that portion of the tendon of the extensor brevis digitorum which goes to the great toe; this was continued to the bottom of the web between the first and great toes. A similar incision was made on the plantar surface of the foot, slightly to the outer side of the line of the tendon of the flexor longus pollicis. The intervening parts were divided through the whole thickness of the sole of the foot, so as to join the two incisions. The great toe was then strongly adducted, and the external lateral ligament divided, opening the joint. After freeing the soft parts from the neck of the first metatarsal bone with the handle of a scalpel, the phalanx was completely displaced, The great toe was adducted still further, until its inner border lay along the inner border of the foot, its point looking directly backward; the head and neck of the first metatarsal bone, together with a large exostosis constituting the "bunion," were thus freely exposed. The latter, together with the inner half of the articular surface of the former, were sawn off by an oblique cut. The toe was then replaced in its normal position, and drainage provided by a tube in the bottom of the gap. The soft parts were sutured; dressings of sublimate gauze and paper wool, and a splint, were applied to retain the toe in a straight position. The other foot was operated upon in the same manner. In three weeks the patient could walk comfortably, but was kept under observation until the end of the sixth week,

when she was discharged from the hospital cured. After cicatrization it was found that a shoe and stocking, with separate compartments for the great toe, furnished all the support that was necessary—*Medical Record*, September 7, 1889.

Treatment of Chronic Prostatitis.—MATTHEW BERKELEY HILL, in his lectures at the Royal College of Surgeons of England, "On Some Affections of the Genito-urinary Organs," says that the treatment of chronic prostatitis is very tedious. Few remedies are trustworthy. In the first place, dyspepsia must be cured. The most beneficial tonics are the non-astringent forms of iron, to which nux vomica or strychnine may be added, and belladonna, if micturition during sleep, be a symptom. Ergotine is especially useful when the organ is large, and aching is caused by walking, standing, or railway journeys.

Local Treatment.—Cold sitz-baths are useful when the organ is enlarged, soft, and not tender. The bath should at first be taken at 50° F., once or twice daily, and for one or two minutes only, and the duration gradually increased to ten minutes while the temperature is gradually decreased to 35°. The cold douche on the anus and perineum is also useful. Two to four ounces of cold water as an enema, to be retained in the rectum, is more generally beneficial than the bath. No faith is put in blistering. When the prostatitis is the result of masturbation or excessive venery, the urine is often more or less bloody. To the touch, the organ is little changed. The liquid extract of salix nigra, in dose of one drachm, three times daily, has often a marked effect in checking involuntary emissions and preventing the irritation, exhaustion, and neuralgia which occur after them. Topical treatment must be omitted after the mucous catarrh and chronic inflammation are quelled. Coitus may be rendered imperfect or impossible by reason of too speedy ejaculation, in those who have suffered from congested prostate. In these cases the fluid extract of damiana has a powerful effect, but cure is almost impossible if continence is neglected. A condition of helplessness, intense neuralgia of the lower extremities following the shortest walks, pains extending from the sacrum to the occiput while at rest, deteriorated digestion, etc., are complained of. The best remedy in such instances is a quiet life, absence of exertion of any kind, and a long sea-voyage. In rare cases chronic parenchymatous prostatitis excites temporary mania which disappears if the physical affection is cured.—*Journal of Cutaneous and Genito-Urinary Diseases*, September, 1889.

Peruvian Balsam in Laryngeal Phthisis.—SCHNITZLER, of Vienna, at a recent meeting of the International Congress for Otology and Laryngology, spoke highly of the local and general treatment of laryngeal phthisis with Peruvian balsam. Internally he prescribes it in the form of pills, or emulsified with cod-liver oil or lipanin. Locally, he uses it mixed with bismuth. subnit. and milk sugar as an insufflation, and equal parts of the balsam and alcohol as an inhalation. If much ulceration exists, he curettes the ulcers and applies to the freshened surfaces equal parts of the balsam and alcohol with a small percentage of cocaine. Combined with collodion it serves to protect the diseased surfaces from the pulmonary secretions. With this treatment, according to Schnitzler, the swelling of mucous membrane diminishes and ulcers cicatrize.—*Münch. med. Wochen.*, No. 40.

Nitrate of Silver in Purpura Hæmorrhagica.—DR. POULET, in the *Bullet. gén. de Thérap.*, reports two cases of purpura successfully treated by the internal administration of nitrate of silver. The first, a child of twelve years, had previously been treated with iron, and by other methods, without result. After one-sixth grain doses of the silver salt, twice daily, had been ordered, he rapidly recovered. The second case, a woman of twenty years, was also quickly relieved with doses of one-eighth of a grain three times daily. Poulet believes that the silver acts in this disease by virtue of its well-known effects upon the central nervous system.—*Therap. Monatshefte*, September, 1889.

Alopecia Simplex.—DR. E. BESNER recommends the following somewhat heroic but efficient method of treating baldness: The hair is cut short, and the scalp reddened with a mild sinapism. Then, for the following five days, a daily application of equal parts of chloroform and acetic acid is carefully made; and, in addition, an ointment composed of salicylic acid one part, precipitated sulphur four parts, vaseline twenty parts.—*Monatshefte f. Praktische Dermatologie*, October 1, 1889.

The Use of Strophanthus in Children.—DEMME, in the *Rev. Mens. des Mal. de l'Enf.*, reaches the following conclusions upon the use of strophanthus in children:

1. Strophanthus, especially in the form of the tincture, may be given to children after their fifth year; but as in large doses it may suddenly and unexpectedly paralyze the heart, three drops four or five times daily should be the maximum amount administered. Exceptionally, its use is followed by dyspeptic symptoms.

2. The predominant action of strophanthus is to increase diuresis, and consecutively to diminish the phenomena of venous stasis. This effect is produced by an increase of blood-pressure, and is especially evident in connection with lesions of the left auriculo-ventricular valves. Unlike digitalis, it does not produce a compensation of the valvular lesion. In affections accompanied by exaggerated, or even normal, arterial pressure, the diuretic effect of the drug is wanting.

3. Strophanthus also exercises a remarkable influence upon dyspnœal phenomena, which is due to its action on the respiratory centres. This effect is seen in cases of chronic nephritis, and in other diseases, as bronchial asthma and whooping-cough.

4. While there are close analogies in more respects than one between the effects of strophanthus and digitalis, each drug possesses its own peculiar therapeutic action. Digitalis is indicated in those cases in which it is desirable to obtain with rapidity, a compensation of valvular lesions, augmented blood-pressure, slowing of the pulse, and increased secretion of urine. If digitalis does not produce these effects, they cannot be obtained with strophanthus. On the contrary, when a valvular lesion has been compensated by digitalis, and it becomes necessary to act anew upon the heart, in order to obtain a new increase in blood-pressure and diuresis; when, in addition, dyspnœa becomes an urgent symptom, strophanthus will give excellent results. In such cases the combined action of strophanthus and digitalis is useful.

5. In no case did Demme observe cumulative effects or weakening of the action of strophanthus, even though used for a long time.—*Archives of Pediatrics*, October, 1889.

Treatment of Vomiting of Pregnancy.—In the *Berliner klin. Wochenschrift* for October 7, 1889, DR. SIGMUND GOTTSCHALK reports a severe case of vomiting of pregnancy in which cocaine and other measures entirely failed, but which quickly yielded to small and frequently repeated doses of menthol. He suggests that further observations be made in this direction, and as menthol is not only a local anæsthetic, but also an antiseptic, it will, probably, be found a valuable addition to the long list of drugs used in combating this troublesome condition. Dr. Gottschalk prescribes about one-third of a grain, in alcohol and water, repeated hourly until the patient is relieved.

Treatment of Herpes Zoster.—DR. BRAMWELL, in speaking of the treatment of herpes zoster, says: In most cases the administration of a brisk purge at the commencement of the attack is probably advantageous. Arsenic—which, as Mr. Jonathan Hutchinson has pointed out, is a specific in many cases of recurrent herpes—has no influence in arresting herpes zoster. Indeed, it is remarkable that, in some cases, the long administration of arsenic seems to produce the disease.

When the pain is very severe, the administration of opium or morphia, either by the mouth or subcutaneously, is necessitated. The application of a fly blister, or of the actual cautery at a red heat, with the object of producing blistering, but not sloughing, over the point where the affected nerve-trunk becomes superficial, is said, in many cases, to be highly advantageous. Cocaine, in the form of ointment (ten grains to the ounce of vaseline), or a spirituous solution of menthol may also be applied locally. Both are useful for the purpose of allaying the painful sensations which persist after the acute stage of the disease is passed, rather than for the relief of the acute pain which is so often met with in the earlier stages of the affection. Hydrobromic acid is, when combined with syrup of oranges, or infusion of gentian, a pleasant remedy, and useful for allaying the uneasy painful sensations which attend convalescence. During the latter stage, arsenic and strychnine are the most reliable remedies for promoting repair in the affected nerves. The constant electric current seems in some cases to be the most effective means of relieving the very distressing after-pains. If this, with internal remedies, fails, stretching, or, better still, dividing, the affected nerve may be employed.

In order to prevent pitting, great care should be taken to prevent suppuration or rupture of the vesicles. The vesicles may be painted over with flexible collodion, or dusted with a drying powder, such as powdered talc 87 parts, powdered starch 10 parts, and salicylic acid 3 parts. Carbolic oil is also a useful application.—*Studies in Clinical Medicine.*

Chloralamid, the New Hypnotic.—The new hypnotic, chloralamid, is being extensively investigated in Germany, and if the studies of LETTOW, KNY, and others are confirmed, it is certainly a valuable discovery. Lettow, after prescribing the drug in thirteen cases of sleeplessness from various causes, concludes that—

(1) Chloralamid is a very efficacious and useful hypnotic, though no panacea for all cases of insomnia.

(2) The greatest advantage over other hypnotics is that it has no influence on pulse, respiration, or temperature.

(3) After-effects are few; if occurring at all, they consist of slight headache, or a trace of giddiness.

(4) The safe dose for an adult is forty-five grains.

(5) The drug is best given one, to one and a half hours before the desired sleep should commence.

(6) Chloralamid when given as an enema is very reliable.

(7) The hypnotic effect is occasionally prolonged over a part of the following day.

Dr. Eugen Kny, assistant physician to the clinic for mental diseases of the University of Strassburg, published, in the *Therapeutische Monatshefte* for August, 1889, the results of his extensive physiological and clinical experiments with chloralamid. He first gave the drug to a large number of animals, and observed a marked hypnotic effect in nearly all. After the artificially produced sleep was over, the animals felt the better for it, and showed no unpleasant symptoms whatever. In one series of experiments the effect of the drug on blood-pressure was studied, the latter being recorded before, during, and after administration. The result of these experiments was, that chloralamid, in contradistinction to chloral, with which it is in close relation chemically as well as physiologically, does not materially alter the arterial blood-pressure. Chloral frequently causes a decrease of the blood-pressure to the amount of fifty to eighty mm., chloralamid caused only seventeen mm. reduction—*i.e.*, not more than is observed during natural sound sleep. This shows that the drug not only has no toxic influence on the heart, but does not even affect its action to any marked degree. Dr. Kny, after having proved the harmlessness of the new substance on animals, went a step further and tried the drug on patients. He gave it more than one hundred times in thirty-one different cases of insomnia, in some of which he had previously given chloral, so that he had an opportunity of comparing the therapeutic value of the two drugs. Chloralamid had a favorable effect in all cases of insomnia caused by nervous excitation, if not accompanied with intense physical pain; furthermore, in all cases where organic lesions, such as phthisis, heart disease, pleurisy, etc., caused the sleeplessness. As a rule, the sleep was deep, refreshing, and sound; and its duration varied between six and ten hours. In the morning the patients woke with perfectly clear heads, and without any derangement of the digestive organs. Sensation of weight in the head, general malaise, and unpleasant taste in the mouth, complaints quite common after chloral sleep, were, Kny states, never noticed after chloralamid. He considers that another important advantage of the latter consists in its not irritating the mucous membranes. A 10 per cent. solution applied to the conjunctiva did not cause any burning sensation, whilst intense pain is felt by similar application of chloral solutions. Regarding the methods of administration, he recommends to dissolve the drug in wine or other alcoholic beverage. Given in this method, even in patients of very weak constitutions and deranged states of digestion it was followed by no ill effects—*The Provincial Medical Journal*, October 1, 1886.

Detection of Sugar in the Urine by the Cupro-potassic Solution.— DRS. YVON and BERLIOZ communicated to the Paris Academy of Medicine, during a discussion on diabetes, the results of experiments undertaken some time previously for the detection of sugar in the urine, and on the choice to be made of the various processes described to detect this abnormal element.

The processes and reagents they divided into the following groups:

1st. By *fermentation*. This process, notwithstanding the different contrivances that have been suggested to shorten the time, is very tedious, not practical, and often gives unsatisfactory results.

2d. By the *polariscope*, *saccharimeter*, or *diabetometer*. In using these instruments it is necessary that at least half a gramme of sugar per litre should be present. When this quantity is not exceeded, the presence of sugar can be detected only by a skilful operator possessing a good apparatus.

3d. By *reagents*, of which there are many. Their names and composition are as follows:

1. Fehling's solution.	Sulphate of copper, neutral tartrate of potassa, soda lye.
2. Bareswill's solution.	Sulphate of copper, acid tartrate of potassa, soda lye.
3. Violette's solution.	Sulphate of copper, Rochelle salts, soda lye.
4. Trommer's reagent.	Sulphate of copper and potassa.
5. Capezzuoli's reagent.	Hydrated blue oxide of copper and caustic potassa.
6. Moore's reagent.	Caustic potassa.
7. Böttger's reagent.	Nitrate of bismuth and carbonate of soda.
8. Mulder's reagent.	Carmine of indigo and an alkaline solution.
9. Neubauer and Vogel's reagent.	Ammoniacal solution of nitrate of silver.
10. Pratesi's reagent.	Bichromate of potassa and an alkaline silicate.
11. Hager's reagent.	Ferrocyanide and caustic potassa.
12. Knapp's reagent.	Cyanide of mercury and an alkali.
13. Penzoldt's reagent.	Diazobenzosulphuric acid and caustic potassa.
14. Loewe's reagent.	Subnitrate of bismuth, glycerine, and soda lye.
15. Almen and Nylander's reagent.	Subnitrate of bismuth, Rochelle salts, solution of caustic potassa.
16. Fischer's reagent.	Phenylhydrazine and acetate of soda.

Amongst these reagents, and others that have not been mentioned, Fehling's solution, or one of its substitutes, is the easiest and quickest, and one that permits the detection of the minimum traces of sugar. To obtain with it the utmost accuracy precautions are necessary.

Among the various formulæ for a cupro-potassic solution, one described by Mehu has been adopted, rendering it only more alkaline than he advised. It is better to prepare it in small quantities, so as to renew it often, preserving it in bottles closed with a rubber cork, and kept in the dark. This solution can be so prepared that a cubic centimetre will be entirely reduced by five milligrammes of glucose. Under these conditions any given volume of this solution is entirely reduced by an equal quantity of urine containing five grammes of sugar to the litre. But five grammes to the litre is far from indicating the limit of the sensitiveness of the solution. It simply signifies that to have a complete decolorization of a sample of urine one must use:

1. One volume of solution.
   One volume of urine containing five grammes of sugar per litre.
2. One volume of solution.
   Two volumes of urine containing 2.5 grammes of sugar per litre.
3. One volume of solution.
   Three volumes of urine containing 1.66 grammes of sugar per litre.
4. One volume of solution.
   Four volumes of urine containing 1.25 grammes of sugar per litre.

In qualitative examinations it is not necessary to obtain the total reduction of the solution; it suffices if it is pronounced enough, and if there is an appreciable quantity of oxide of copper precipitated. It is no exaggeration to say that the reduction is very apparent when only a third of the oxide of copper contained in the solution is precipitated. Under these conditions, in varying the quantities of urine from even one to four times that of the solution, a quantity of glucose corresponding to one-half a gramme per litre can be detected. This limit can be still further reduced by evaporating the urine to a third, fifth, or even less, of its original volume.

With certain urines of high densities, rich extractive matter, and strong color, the reduction is often indistinct.

If the proportion of glucose is very low, it is necessary to treat the solution with a volume of urine three or four times greater; and the disturbing influence will increase in proportion. Of all the substances that react upon the cupro-potassic solution, glucose is the one that can be reduced most easily at a temperature much below 100° C., and it will even react in the cold. This property is made use of by heating on a water bath to 85° or 90° C.

For this test it is necessary to clarify the urine, which may be done with subacetate of lead.

If after having treated the urine with Fehling's solution in the ordinary manner, the mixture remains limpid and transparent before and after cooling, the absence of sugar can be confidently assumed. If, on the contrary, the reduction is not sufficiently distinct, and there is doubt as to the presence of glucose, then proceed in the following manner: Mix in a test tube, of about half an inch diameter, two parts of urine and one part of the copper solution, heat the upper part to boiling; if there is sugar in notable quantity there is formed a yellowish coating or deposit, which adheres firmly to the sides of the tube; the mixture assuming at the same time a greenish-yellow color, or the test may be repeated using three or four parts of urine to one of the solution. It is important to have it well mixed. In either case, but particularly in the second, a control test should be made thus:

1. Heat only on a water bath for the reasons we have given.

2. Treat the urine with subacetate of lead and carbonate of soda: the latter in powder so as not to dilute the urine. Under these conditions sugar can be detected in urine containing half a gramme per litre. If there is still doubt as to the presence of sugar, concentrate the urine in a water bath, reducing it to a volume small enough for the glucose which it contains to react sharply. It must be clarified with subacetate of lead, then evaporated to a syrupy consistence and the residue taken up with alcohol. The red or yellow decolorization of the copper solution will not alone determine the presence of sugar. It is necessary to observe a characteristic reduction by the loss of transparency in the mixture, and the appearance of a precipitate of oxide of copper, which may be either red, yellow, or black. A good way to verify a true reduction is to hold the tube before a bright flame. If the solution becomes opaque and obscures the light, it contains a precipitate.

The presence of sugar in normal urine has been sought in vain by the authors.

Sugar in urine is not met with as often as one would think. Among 10,650 suspected urines that they examined, but 2777, or 26 per cent., contained sugar.

The phenylhydrazine test they considered to be one of the least reliable. When urine contains only a small quantity of sugar, it must stand from twelve to twenty-four hours before the crystals of phenyglycosanone are formed; and, what is more serious, the speakers had obtained so-called characteristic crystals in urines which in their judgment contained no sugar.

The conclusion of these experimenters is that the cupro-potassic solution, used with the precautions pointed out, appears to-day to be the quickest and the most exact reagent for detecting the presence of sugar in urine. —*Archives de Médecine Experimentale d'Anatomie et Pathologique*, No. 5, September 1, 1889.

Oxygen in Leukæmia and Chlorosis.—In *The American Journal of the Medical Sciences* for October, 1889, Drs. Da Costa and Hershey report their results in the treatment of two cases of splenic leukæmia, and two of chlorosis, with inhalations of oxygen, and though it is manifestly unwise to draw positive conclusions from so few cases, the improvement in all was so rapid that the method should certainly be given a fair trial in every case of grave anæmia.

Their first patient was a boy of thirteen years, with general weakness, an enlarged spleen, and blood corpuscles numbering 2,350,000 red, to 320,000 white per c.mm. Iron, arsenic, trinitrine, and other measures had been used without effect, the patient was steadily growing weaker. Improvement began immediately upon the inhalation of from twenty to thirty litres of oxygen daily, and in two months the patient was able to resume work. One month later, his red corpuscles numbered 4,850,000, and the white were so nearly normal that a count was not made.

The second case, a man of thirty-five years, had probably been leukæmic for several years, and had also suffered from polyuria. Customary treatment was followed by no benefit. When inhalations of oxygen were commenced the patient was exceedingly weak, with œdematous feet and legs, dyspnœa on slight exertion, profuse watery diarrhœa, and a temperature of 102.3°. His spleen was enormous, extending two inches beyond the umbilicus. The red corpuscles numbered 1,440,000, were pale in color, and did not form rouleaux. The leucocytes were 1,120,000 in number, and of various sizes and shapes. Two days after ten litres of oxygen three times daily was begun, the distorted and large leucocytes had entirely disappeared, and the red corpuscles formed rouleaux rapidly. At the end of a week œdema had almost disappeared, the temperature had fallen to normal, the white corpuscles had decreased nearly one-half, while the red had increased nearly-two-thirds. With the exception of a short period, during which, from indiscretions of the patient, the white corpuscles increased and the red diminished, he has steadily improved in every respect, the spleen being markedly reduced in size. From the time that oxygen was begun no drugs were given other than a mild hypnotic at night and, for a few days, Basham's mixture.

In the two cases of chlorosis, oxygen was used as an adjunct to iron, and the effects, though not as striking as in the leukæmics, were excellent.

At present the authors have a case of pernicious anæmia under the oxygen treatment, a report of which will be awaited with interest.

Corrosive Sublimate Hypodermatically.—In controlling late syphilitic manifestations, such as gummata, nocturnal headache, and periostitis, Dr. Langdon, of Cincinnati, has found the hypodermatic administration of corrosive sublimate satisfactory. He plunges the needle deeply into the muscular tissue, usually of the upper gluteal region. Some smarting follows the injection, but he has never seen an abscess produced. His solution is prepared by dissolving one part of the sublimate in three or more of glycerine, and diluting with water to the desired strength. To avoid precipitation, the solution should not be kept long.—*The Cincinnati Lancet-Clinic*, October 12, 1889.

Creasote for Diseases of the Air-passages.—Additional testimony as to the value of creasote in diseases of the throat, bronchi, and lungs is furnished by Dr. William Perry Watson, who, in the *Virginia Medical Monthly* for October, 1889, reports his results in fifty cases. His conclusions are that, while creasote will not cure all cases of consumption, yet it will benefit nearly all; that in cases with simply consolidation before the "breaking-down" process begins, it seems to arrest the diseased process, and further investigations will be required to ascertain its permanent utility, although similar cases observed for a long time by Robinson and Flint would convince us that the improvement was lasting.

In acute and chronic diseases of the bronchi, it was very beneficial, cases of the former being quickly cured, while those of the latter were improved sufficiently for them to leave the hospital in a short time. Another very important fact noticed in these experiments was, that the more constant the inhaler was worn, and the internal mixture taken, the more marked was the improvement; so that Dr. Waln was satisfied that, to obtain the full benefits of this treatment, the system should be saturated with the creasote as rapidly as possible; and while he would not expect miraculous cures, yet he believed it is, combined with good hygienic and dietetic

surroundings, the most promising treatment of consumption in the laboring classes we yet possess.

Dr. Watson in most cases used creasote both as an inhalation and internally. For inhaling he prescribes:

℞.—Creasoti
Sp. chloroformi
Alcoholis } . . āā equal parts.—M.

Sig.—Five to twenty drops to be used in the inhaler every three hours.

Or,

℞.—Iodoformi . . . . gr. xxiv.
Creasoti . . . . ♏ iv.
Ol. eucalypti . . . . ♏ viij.
Chloroformi . . . . ♏ xlviij.
Alcoholis
Ætheris } . āā q. s. ad. f℥ss. —M.

Sig.—Five to twenty drops to be used in inhaler every three hours.

For internal use:

℞.—Creasoti . . . . . ♏ xxiv.
Glycerinæ . . . . f℥j.
Spts. frumenti . . . ad. f℥ij.—M.

Sig.—Half a teaspoonful every three hours.

Creasote.—DR. J. E. NEWCOMB prescribes creasote for pulmonary phthisis in adults in the following mixture:

℞.—Creasoti
Tincturæ capsici } . . . āā f℥iij.
Mucilago acaciæ . . . f℥ss.
Aquæ . . . . . ad. f℥iv.—M.

Sig.—Dose, one teaspoonful well diluted.

The proportion of creasote may be reduced or increased, according to the age or toleration of the patient. —*College and Clinical Record.*

Formula for Migraine.—DR. HAMMERSCHLAG publishes, in the *Allgemein medicinische Centralzeitung*, the following prescription which he has found valuable in migraine:

℞.—Caffein citrat. . . . . gr. jss.
Phenacetin . . . . gr. iij.
Sacchar. lacti . . . . gr. v.—M.
Ft. Pulv.

Such a powder may be taken every two hours until the patient is relieved.—*The Provincial Medical Journal*, October 1, 1889.

Chronic Gonorrhœa.—DR. WILLIAM FLEINER recommends the following injection for chronic gonorrhœa:

℞.—Argent. nitrat. . . . . gr. j.
Lanolin . . . . . gr. l.
Ol. olivæ . . . . . gr. xx.—M.

The nitrate of silver should be dissolved in a minimum amount of water before incorporating with the other ingredients.—*Münchener medicinische Wochenschrift*, No. 40.

Tuberculosis in Children.—According to the *Medical Press and Circular*, DR. JACOBI believes that arsenic is a remedy of much usefulness in the treatment of tuberculosis in children, but it is necessary only to administer the drug in small doses. A young patient, for example, could take every day, and that for weeks or months, two drops of Fowler's solution. This dose should be diluted in a sufficient quantity of water, and given three times a day after meals. If any signs of saturation supervene, the dose should be withheld for a time. A second remedy of almost equal value in these cases, is digitalis. Under the influence of this drug the contractility of the heart muscle is strengthened, and, consecutively, the arterial pressure is increased, and the rapidity of the pulse diminished. The general effect of the increased arterial pressure is to favor the nutrition of the tissues. The choice of the particular preparation of the drug is a point of some moment. Oftentimes the infusion and the tincture are badly borne by the stomach; digitaline, on the other hand, is an inconstant preparation; thus the fluid extract is most to be recommended, either in pills or in capsules, and this can be dispensed with other drugs, such as iron.—*Cincinnati Lancet-Clinic*, October 26, 1889.

Poisoning from the External Application of Chromic Acid.—DR. J. WILLIAM WHITE reports the following case in the *University Medical Magazine* for November, 1889:

A young woman was suffering from non-specific vegetations covering the labia majora and the nymphæ, extending up toward the pubes and down toward the anus, and several inches in thickness. The vegetations had been treated for two weeks with cold poultices, after the method of Peters, of Prague. No improvement following, Dr. White ordered the usual application of chromic acid solution, of the strength of one hundred grains to the ounce of water, directing the neighboring parts to be protected and an excess of the acid to be avoided. The application was made on the afternoon of the same day. The acid solution was applied by means of a tuft of absorbent cotton, about a half ounce of the liquid being used. The vagina and anus were carefully protected by tampons of cotton soaked in carbolized oil. After coming from under the anæsthetic she complained of a burning pain referred to her vulva; this continued through the night, during which time she was restless, and frequently called for water. About 4 A. M. she rose to urinate, and fell; she was assisted to bed and slept until 7 A. M. She continued thirsty but not feverish, all the morning, complained of nausea, and refused her food. When next seen, at 3 P. M., she was pale, with cold extremities, rapid pulse, complained of pain in the left hypochondriac region, and expressed fear of approaching death. Temperature in axilla 99°. Although active treatment was instituted her condition did not improve, and she died at 6.30 P. M., twenty-seven hours after the application of the acid. Intellection was preserved to the last.

At the autopsy the cause of death was not evident, but portions of the viscera submitted to Dr. John Marshall for chemical examination showed that the kidney tissue and the liver tissue both contained chromium, most likely as sodium chromate—a substance poisonous in doses of from one to three grains. The chromic acid was absorbed, and entered into combination with the sodium of the sodium carbonate of the blood to form sodium chromate. This is the most probable explanation of what occurred.

[It seems not impossible that the prolonged poulticing may have had some influence in the unusual absorption of the chromic acid.—ED.]

THE MEDICAL NEWS.
A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,
PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, NOVEMBER 2, 1889.

HYPNOTISM IN THERAPEUTICS.

THAT hypnotism is assuming a certain position in rational therapeutics, can no longer be denied by the unprejudiced, though its value is difficult to determine, and, being in a transitional stage, its future is impossible to prophesy. For more than a century, empirics have claimed that through it marvellous cures resulted, but, until the time of Braid, its literature was a mass of such mystical theories and absurd statements, that to the rational mind intentional imposture seemed the only explanation. Braid, of Manchester, was the first to study the subject in a spirit approaching the scientific, and to him is due much of the modern revival of interest. His conclusions, that this curious psychological condition could be explained without the aid of subtle magnetic fluid or mysterious force, were announced shortly after the Paris Academy of Sciences had autocratically declared the subject unworthy of further discussion, and at first excited little comment. Contemporaneous with Braid was Esdail, of Calcutta, who, utilizing the hypnotic state as an anæsthetic, performed more than six hundred surgical operations on patients under its influence. For a time, little credence was placed in his statements, but a committee appointed by the Indian Government finally substantiated them in every particular.

Systematic use of suggestions during hypnosis began with the so-called Nancy school of physicians, who, represented by Bernheim and Liébault, claim not only to cure all manner of ailments, but, with the assurance of the charlatan Mesmer himself, to elevate depraved characters and exorcise vicious propensities. The possession of such powers, however devoutly to be wished, is so entirely at variance with human experience, that the statements of this school are generally ridiculed and discredited. Charcot, who has added much to our knowledge of hypnotic phenomena, has studied it as a curative agent less than Voisin and other physicians of the Salpêtrière. Voisin has obtained indubitable cures of hysteria, hystero-epilepsy, and probably of dipsomania by means of hypnotic suggestions.

Among the insane he also claims excellent results: quieting mania, removing hallucinations, producing natural sleep, and controlling obstreperous patients. His assertion, that 90 per cent. of the mentally diseased are susceptible to hypnosis, opens his results to criticism, for it is incredible that so large a proportion can be induced to submit to the necessary procedures, and force would here be entirely useless. It is at least suggestive, that his most brilliant results have been in the treatment of French women, who are notoriously hysterical and imaginative. Furthermore, Voisin and other enthusiasts invariably lose sight of the dominating influence of a strong intellect over a weaker, and forget how much can be accomplished by excitation and skilful guidance of the imagination. Forel, another apostle of suggestive therapeusis, disagrees with Voisin as to its wide applicability in the treatment of insanity.

The most recent contribution to the literature of hypnotism in therapeutics, is from the pen of von Corval (*Therapeutische Monatshefte*, September, 1889), who publishes a long list of diseases in which he has seen suggestive therapeutics productive of remarkable results. If his statements could be unreservedly accepted, we have in the method almost a specific for acute alcoholism, neuralgia of all varieties, lightning pains of tabes, epilepsy, deafness, tinnitus aurium, asthma, and muscular rheumatism. Acute alcoholism he finds invariably benefited after a single sitting, the appetite and sleep returning, nervousness disappearing. He does not seem convinced that relapses can be prevented, but believes them less frequent than with the ordinary methods of treatment. For the relief of neuralgia he considers it superior to morphine, with more or less permanent effect. The convulsions of epilepsy, according to this writer, are reduced in frequency or altogether prevented. Deafness and tinnitus are

improved, if anatomical changes are not too great. The paroxysms of bronchial asthma are quickly relieved, the dyspnœa disappearing, and the patient falling into a comfortable sleep. Corval's results read like the advertisement of a patent medicine, and it is utterly impossible to accept them in their entirety. It is just such enthusiastic and sweeping assertions that prejudice the profession against the method as a whole, and keep it in disgrace.

Notwithstanding his apparent overstatement of facts, Corval's deductions are quite dispassionate. He believes that in suggestive therapeutics we possess a method of treatment which is in some cases curative, in others simply palliative; that with judicious selection of cases, and avoidance of unnecessary experiments, it is no more dangerous than many other curative means; that the indications and contra-indications being as yet imperfectly defined, its use should be confined to those cases in which the usual treatment is unsatisfactory or dangerous—replacing morphine in neuralgia and chloroform as an anæsthetic; that the method should be studied earnestly and scientifically; and, finally, to prevent abuse, its use should be confined, by law, to physicians.

As an anæsthetic it is extremely doubtful if hypnotism will ever replace chloroform or ether, as it is impossible to determine what individuals are susceptible, and every case must be an experiment. In hysteria and functional diseases of hysterics will its true field probably be found, though even here it is doubtful if its use becomes general. It is not to be forgotten that hypnotism has been followed by injurious effects: epilepsy has grown more severe, hysteria has been produced in the previously well, and permanent hysterical contractures have developed. In several instances it has been impossible to arouse patients from the hypnotic sleep for several weeks.

A few words on the methods by which the hypnotic state is induced may not be out of place. Braid's process, which is the one usually adopted, consists in requiring the patient to stare at any small, bright object held just above the bridge of the nose. This causes strong upward convergence of the eyes and a strain upon the ocular muscles, which assists in fixing the subject's attention. It is also essential that the surroundings be quiet, and that, as far as possible, the patient be convinced of certain success. After a variable length of time, in a susceptible person, the eyes close, when the operator tells him in a positive voice that they cannot be opened. If they remain motionless he is hypnotized, and the suggestions or commands deemed advisable are now given. With many individuals frequent attempts on succeeding days will be required, before success is attained, but with perseverance, probably more than one-third of all persons can be so influenced. The so-called "passes," or strokings, are apparently attended with no greater success than Braid's method, and while savoring more of charlatanism, possess, nevertheless, certain advantages over the employment of the fixed stare at a bright button, in that they are made by the operator, and do not require obedience on the part of the patient. This is particularly true in persons who are insane or unruly.

THE TREATMENT OF URETHRAL STRICTURE.

IN the London *Lancet* for September 14, 1889, is an admirable clinical lecture upon "Stricture of the Urethra and its Treatment," delivered by Mr. Walter Rivington, Surgeon to the London Hospital. One or two points upon which the lecturer dwelt, although neither of them might at first sight attract attention, are, nevertheless, of grave practical importance. The first of these points is that, in treating a stricture, the utmost care should be taken to avoid making a false passage. This injunction may appear trite, but unfortunately it is a necessary one. There is, probably, no surgeon of wide hospital experience who has not been called upon to deal with cases in which this unfortunate accident has occurred. In most instances it has occurred during efforts at catheterization for the relief of retention of urine resulting from alcoholic or sexual debauch, in a case of long-standing and neglected stricture. The stricture which, prior to the debauch, may have permitted the urine to pass, if only by drops, is occluded by congestion of the mucous membrane and muscular spasm. It is, in fact, for the time being at least, practically impermeable. In spite of this fact, however, attempts are made to get a catheter to go through it, and, one after another, successively smaller instruments are called into service until, finally, the smallest metallic catheter is passed down to the anterior face of the stricture. After prolonged efforts, something yields, the instrument advances, but not within the urethral walls—a false passage has been made; the congested, softened, unhealthy mucous membrane has been penetrated, and that without the employment of any consider-

able force. From this moment a new source of danger is added to the patient's already serious condition, and a vexatious obstacle is put in the surgeon's way.

Bearing in mind the fact that retention of urine may exist for twenty-four hours before danger of rupture of the bladder becomes imminent, it will be seen that very often there is really no immediate necessity for resorting to the use of a catheter. Even should there be imperative demand for speedy relief, we have the resource of suprapubic aspiration of the bladder. Mr. Rivington's advice that in dealing with cases of retention, the physician should, wherever practicable, abstain from catheterism, "especially from the employment of the finer instruments," we consider sound. To use his own language, when speaking of a case applying at a hospital: "If a No. 5 or 6 (English) silver or flexible olivary catheter can be gently passed, well and good; if not, the patient should be taken in, ordered a warm bath, a drop or two of croton oil, or a dose of house medicine, and afterward some tincture of opium or a similar sedative, whilst warm fomentations are applied to the abdomen. Retention of urine generally yields to these measures within twenty-four hours." This latter statement will be supported by practical surgeons. It will be seen, therefore, that one way to avoid making false passages is to be tardy in the employment of instruments capable of doing mischief.

Another point dwelt upon by Mr. Rivington is the value of rest in the treatment of stricture. Practical experience has established so clearly the beneficial action of rest in the recumbent posture in cases of tight stricture, that it is scarcely necessary to allude to it; but it is well to bear in mind the value of preceding a period of active treatment with one of wholesome inactivity.

Such observations as these are of the greatest use to those to whom they were originally made—students of medicine—and are not without value to the general practitioner, and while the surgeon who is skilled in the treatment of genito-urinary diseases may, for the moment, think such points so obvious as not to need comment, he will, upon reflection, realize their import to others less familiar with the subject than himself.

The opening meeting of the D. Hayes Agnew Surgical Society of the University of Pennsylvania will be held in the University Chapel, Saturday, November 2, 1889, at 8 P.M. Addresses will be made by Dr. William Pepper and Dr. D. Hayes Agnew, President Ex-officio.

REVIEWS.

Hand-book of Materia Medica, Pharmacy, and Therapeutics. Compiled for the use of students preparing for examination. By Cuthbert Bowen, M.D., B.A. Duodecimo, pp. 366. F. A. Davis, publisher; Philadelphia and London, 1889.

The author's object, as stated in his preface, has been to furnish to the student a book containing, in a compact form, the questions and answers generally encountered in coming up for examination. That the volume is not intended as a text-book, the author himself appreciates.

The general plan is similar to that of like manuals already at the student's command. The book opens with some good practical remarks upon and rules for proper prescription-writing, dosage, and administration of remedies. Following this, the author gives a very full list of drugs chemically and pharmaceutically incompatible. The remainder of the volume is occupied by questions and answers relating to the source, nature, preparations, doses, physiological actions and uses of the various drugs. A good feature of the book is the presentation o a number of typical prescriptions containing each drug as it is mentioned.

The author supports the use of the term hypodermatic as opposed to hypodermic, but throughout the volume uses the latter word. It is unfortunate that none of the more recent hypnotics and antipyretics have been mentioned. This, of course, deprives the book of much of its value as an aid to students.

Although, with the above mentioned exceptions, most of the drugs are fully dealt with, there are many important remedies, notably hyoscin, that have received but scant mention.

The form in which the book is prepared is attractive, but its range of usefulness is strictly limited to the particular class for whose benefit it was written.

Wood's Medical and Surgical Monographs. Volume I. Number 2. Octavo, pp. 267. New York: William Wood & Co., February, 1889.

Considerably more than one-half of this, the second number of the series, is devoted to an exhaustive treatise by Dr. William Japp Sinclair on Gonorrhœal Infection in Women. The first two chapters are mainly historical, showing how this important subject has been neglected, yet how frequent the disease is in females, and by what serious sequelæ it is followed. Dr. Sinclair does not seem to think Noeggerath's statement exaggerated, that in New York eighty per cent. of all men have had gonorrhœa, ninety per cent. of whom remain uncured, and that ninety per cent. of women marrying these men are infected. Have more than *one-half* of the women in New York some disease the result of gonorrhœa? We hope not, and believe not.

Neisser's gonococcus is unreservedly regarded as the causation, and its presence a pathognomonic sign. "If gonococci are present in the discharge from an inflamed mucous membrane the discharge is of gonorrhœal origin." "Without the gonococcos there is no gonorrhœa." Dr. Sinclair virtually denies that urethritis in the male is ever caused by non-specific discharges in the female. The remaining chapters are devoted to the

complications, uterine, tubal, ovarian, and urethral, of gonorrhœa in the female, to prophylaxis and to treatment.

The whole article represents an immense amount of research and reflects the most advanced medical thought. Following this essay are three lectures of Dr. Thomas Grainger Stewart on Giddiness, a subject which is carefully reviewed in detail as a symptom of cerebral, aural, and gastric disturbances. Dr. Stewart's profound knowledge and happy style make these lectures valuable alike to the student of nervous diseases and to the general practitioner.

The remaining monograph—A Critical Study of the Clinical Value of Albuminuria in Bright's Disease, by Dr. Pierre Jaenton—is a fair representation of the latest views on this much-discussed subject. An extensive and valuable bibliography is appended to several of the chapters.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. Vol. II., No. 2. ON THE PREVENTIVE TREATMENT OF CALCULOUS DISEASE AND THE USE OF SOLVENT REMEDIES. By SIR HENRY THOMPSON, F.R.C.S., M.B.

SPRAINS: THEIR CONSEQUENCES AND TREATMENT. By C. W. MANSELL MOULLIN, M.A., M.D.

IN the article by Sir Henry Thompson, given us in this number of the so-called *Monographs*, the advanced and logical idea of the day in respect to the treatment of stone in the bladder is clearly stated. Careful reading of this paper impresses one with the fact that the old proverb, "an ounce of prevention is worth a pound of cure," obtains more largely in relation to such troubles than is generally supposed, and we learn that the greatest of living genito-urinary surgeons relies not upon the solution of stones already formed, but upon the measures directed to the systemic states which predispose to their formation. His idea in this respect is, briefly, to prevent their development, and this failing, to resort to surgical relief. Not one case in a thousand has been cured in the past by the methods resorted to for the solution of the stone.

By far the largest part of the volume is, however, taken up with the article on "Sprains," written by Moullin. This is the most exhaustive paper concerning these rather common accidents that we have ever seen, and is also one of the clearest and most intelligent in its dealing with the subject at hand. The anatomy of the parts involved, the conditions of the muscles predisposing to such states, the symptoms present after the reception of the injury, and, finally, the sequelæ so commonly seen after ruptures of ligaments, are all taken up and considered with great thoroughness and exactitude. The chapters on treatment are extremely well written and practical, and are worthy of the series which they so well represent.

THE RADICAL CURE OF HERNIA BY MEANS OF THE BURIED ANTISEPTIC ANIMAL LIGATURE. By HENRY O. MARCY, A.M., M.D., LL.D. 12mo., pp. 251. Detroit: George S. Davis, 1889.

THIS number of the "Physician's Leisure Library," which has just been received, is presented in the same attractive shape as its predecessors. It is a very complete monograph upon the various forms of hernia, and the different methods employed for their radical cure, from the earliest times to the present day. The author claims no originality in the performance of his operations, but simply details the results attained and the conclusions arrived at during a careful study of hernia, and in an extensive operative practice of eighteen years.

The classification of herniæ in the introductory chapter would, from its multiplicity of terms, tend rather to confuse than aid the average reader, for, among other things, we cannot conceive that the terms "supra-pubian" or "infra-pubian" convey any more distinct idea than do inguinal and femoral. The anatomical relations of the structures involved, in the various forms of hernia, are exhaustively considered, and the illustrative plates are well selected.

After an elaborate series of tables, showing the relative frequency of the occurrence of hernia, the author proceeds to give a careful *résumé* of the radical operation, discussing with great minuteness the indications for it, the manner of preparing both patient and operator, the actual surgical procedure, and the necessary after-treatment. The methods of ligation of the sac and closure of the ring are clearly and concisely described.

Dr. Marcy has evidently spared no pains in collecting and carefully arranging the views of the best surgeons, both in this and other countries. His style is easy yet forcible, and the reader cannot fail to be interested by his masterly treatment and clear exposition of the subject.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, October 1, 1889.

THE PRESIDENT, G. W. JACOBY, M.D., IN THE CHAIR.

DR. A. A. BOYER presented a case of

LESION OF THE PONS,

with a history, of which the following is a brief synopsis:

C. W. B., aged forty-five, syphilitic, in June, 1888, while at work, felt a sudden sensation at the occiput, as though he had been shot. It was immediately followed by intense headache and nausea. Later, vomiting and insomnia became prominent symptoms, lasting for six weeks. There was then an interval of two weeks without these symptoms, after which they returned in greater severity. On August 14th, his left thigh became cold and numb; which sensations, in a few hours, extended up the trunk, left arm, and left face. In the morning there was anæsthesia with paralysis of the entire left side of the body. When first seen, eight months later, he had a hemiplegic gait, inco-ordination and paralysis of the left arm, good equilibration, paresis of the left leg, drooping of left side of mouth, and left-sided hemianæsthesia and hemianalgesia. The lesion would, therefore, seem to be located in the pons, to the right of the median line, above the line of Gubler, and involving the fillet, the reticular formation, and pyramidal tract. The speaker thought a lesion here would be high enough to produce paralysis of the facial muscles of the opposite side, and

low enough to leave unaffected the ocular nerves. He believed the most reasonable theory as to the nature of the lesion was thrombosis resulting from obliterating endarteritis or hemorrhage.

Dr. Birdsall saw no necessity for assuming a lesion of the pons to explain the symptoms, which seemed to be wholly unilateral. He usually expected something particularly characteristic in pontic lesions, such as alternating paralysis. He thought a capsular lesion would account for all the symptoms in this case, the absence of other pontic features strengthening such a view.

Dr. Starr agreed with Dr. Birdsall as to the localization of the lesion. He believed the case to be one of ordinary hemiplegia, with a lesion in the internal capsule. Unless there were alternating paralysis, or some other characteristic symptoms, it was unnecessary to locate the disease in the pons.

Dr. Boyer in closing the discussion said he located the lesion in the pons because there was no loss of consciousness at the onset of the attack, although decided and varied paralyses immediately followed. In his opinion this pointed strongly to a minute lesion, which only in the pons could produce such marked symptoms. The inco-ordination now remaining after the disappearance of most of the motor symptoms indicated a lesion of the fillet or of the commissural fibres in that vicinity.

Dr. L. C. Gray then read a paper entitled,

THE CURABILITY OF LOCOMOTOR ATAXIA.

Speaking first of the modern knowledge of the pathology, he then went into the question of histology. He regarded the original focus of disease as a cellular or inflammatory alteration of the cord, sometimes possibly a meningitis, from either of which the ascending secondary degeneration started. Erb and Schultze had reported a case of indubitable locomotor ataxia, in which the cord was examined microscopically, and in which the symptoms had disappeared almost entirely for some twelve years. He did not believe there was a cure on record, although it is unquestionable that many cases of great improvement had been reported, more especially among those with a history of syphilitic infection.

Dr. Gray narrated a case of his own, illustrating the association of locomotor ataxia with general paresis, the mental hebetude of the latter disease causing an apparent improvement in the former.

Dr. Dana said that we had changed our conceptions as to the variations in clinical types and as to the pathological lesions of locomotor ataxia. Probably ninety per cent. of our cases are typical and answer to the classic descriptions of the disease, but there is a minority of cases which have non-typical manifestations, types with optic atrophy, latent, spinal and spastic symptoms, with peripheral lesions, etc., and the prognosis varies in these forms. For instance, in the spastic variety, the prognosis is not bad, but exceedingly so where there is rapid emaciation of the lower extremities. He had recently examined his notes, and the results of treatment in 56 cases, which were as follows:

10 very much improved (3 syphilitic);
6 improved (4 syphilitic);
14 stationary (3 syphilitic);
13 progressive (6 syphilitic); 2 fatal;
10 doubtful, or unknown.

He believed locomotor ataxia to be a degenerative disorder, affecting nerve fibres primarily, not beginning at a single focus, but at different places at various times, and to cure the disease we should have to discover a drug which would stop this degenerative process. As to suspension, he had tried it in twenty-two cases, with six hundred suspensions, since last April. Of these, four were much improved, six improved, six unimproved, and six discontinued the treatment.

Dr. Birdsall coincided with the speaker in the opinion expressed as to the incurability of the disease. In one of his own cases, a syphilitic, ataxia had disappeared for nine years, although the patient now suffered again from various crises, gastric and laryngeal, and some cerebral symptoms. For five years the active symptoms had been referred to the trunk and upper extremities. He had seen other very similar cases and could speak of none as cured.

He had tried suspension in a few cases, with no favorable results, though he did not deem it wise to cast it altogether aside.

He had seen injurious effects from large doses of potassic iodide, and, in his opinion, tabetic cases could not tolerate this drug as well as others.

Dr. Starr said, with regard to the differential diagnosis between peripheral and cerebral cases, we first judge from the order in which the symptoms occur, as well as from the symptoms themselves, which in the former class developed more rapidly than in the latter.

Some seven years ago, Dr. Austin Flint read a paper in this Academy upon the self-limitation of phthisis, and a description similar to his might apply to locomotor ataxia. It is possible that the sclerosis of the cord may be a protective process, an effort of nature to arrest or provide against the effects of disease; indeed, a pathologist of this city has taught for two years that connective tissue is always thrown out by nature as a defence. Thus, locomotor ataxia might be a self-limited disease like phthisis in a few instances.

His own records showed 25 cases seen in the last four years, 17 of which are carefully detailed. In 9 of the 17 there had been various periods of non-progression, while in 8, with similar treatment, there had been steady advance. He thought specific treatment worthy of trial in patients with a syphilitic history, but he had little faith in its efficacy, as in his experience it afforded less benefit in locomotor ataxia than in other specific nervous affections. He usually employed the English treatment—small doses of arsenic and biniodide of mercury.

Among 13 patients treated by suspension at the Vanderbilt Clinic, tabulated by Dr. Peterson, there were 7 cases of locomotor ataxia. In 2 cases only had there been distinct improvement, and none at all in 4, while in 2 the results were injurious, the suspension producing syncope, nausea and vomiting, severe pain, and enuresis at different times.

Dr. Sachs had observed in two cases the disappearance of the cardinal symptoms of locomotor ataxia, without treatment. The first was as follows:

B. L., merchant, aged forty-eight, seen August 18, 1886. His symptoms were retching, dizziness, numbness of arm, unsteadiness in walking, absence of knee-jerk, slight swaying with closed eyes, and a feeling as though his drawers were too tight around the waist. Dr. Sachs

had made the diagnosis of tabes incipiens, though with some hesitation, for the general condition of the patient was very good. After two months a slight knee-jerk had returned on the right side, and later the left was recovered. Three years had now elapsed since the observation of these symptoms, and the man was in perfect health at the present day. He believed it to have been a functional derangement of the cord, due to overwork.

In syphilis a simple specific spinal meningitis might simulate a posterior sclerosis, and should be borne in mind when cases improve under treatment.

Suspension he had found unsatisfactory in ataxia, but in spastic cases, such as myelitis, it seemed to him of more use.

DR. WAITZFELDER had used suspension in a case of spastic paraplegia, which became worse, but he had noted considerable improvement in gait in several ataxics who were subjected to this method of treatment.

DR. GRAY then closed the discussion. He said that Fournier's and Rumpf's specific cases showed great improvement under treatment, but such had not been his own experience. He believed that in certain cases there would be great difficulty in distinguishing peripheral from central symptoms. As to self-limitation, mentioned by Dr. Starr, he saw no analogy between tabes and phthisis. In treatment he preferred to follow French authors and employ inunction in specific cases, rather than potassic iodide, for the results were better in his experience.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON THEORY AND PRACTICE OF MEDICINE.

R. C. M. PAGE, M.D., CHAIRMAN.

Stated Meeting, October 15, 1889.

DR. A. JACOBI read a paper on

CHRONIC PERITONITIS, WITH SPECIAL REFERENCE TO THE DIFFERENTIAL DIAGNOSIS OF SOME OF ITS VARIETIES.

Having enumerated a number of the causes of peritonitis, Dr. Jacobi said that perhaps the most frequent was a preceding attack. In autopsies upon cases of perityphlitis, he did not remember one without adhesions and other evidences of previous inflammation, and foreign bodies in the vermiform process were, in his opinion, seldom, if ever, a cause of the disease. Both enteritis and ulceration, acute or chronic, were also the causation in some cases, the inflammation extending by continuity; thus it was that a simple diarrhœa might become an enteritis and terminate in peritonitis.

Old local peritoneal adhesions over a cicatrized ulcer of the stomach or intestine, were soft and prone to rupture, and this was probably a frequent cause of acute peritonitis in persons apparently perfectly well. In diagnosis, chronic peritonitis was frequently overlooked, the intestines becoming glued together, or floating kidneys being fixed by adhesions without recognizable symptoms or signs. In chronic peritonitis, respiration was not necessarily accelerated, particularly if the inflammation was in the pelvis.

Vomiting was occasionally present, but perhaps not as frequently as in other conditions, and was often entirely absent even in acute peritonitis. Either constipation or diarrhœa might be present. A horizontal position might be painful, but this was also not infrequently the case in ordinary colic from accumulated gas, though in the former condition the patient was more likely to remain quiet than in the latter. Tumidity might be observed, but was often difficult to distinguish from the fat, which is so common in this situation, or from hysterical tympany, or distention from habitual constipation. The superficial abdominal veins were more frequently dilated in chronic peritonitis than in any other condition excepting certain hepatic diseases. Inspection might also show swellings, corresponding to intestinal convolutions, and palpation might reveal hard or soft exudations in the form of nodules or cakes, which consisted of organized lymph, thickened omentum, or a mass of intestines glued together. Fluctuation would indicate the presence of fluid more certainly than percussion dulness, which might be rendered uncertain by the presence of adhesions, retaining the distended gut between the abdominal walls and an accumulation of fluid. A chronic peritonitis may be sometimes discovered by placing the patient on his back, and having him alternately flex and extend his thighs; while doing this, pressure of varying depths is made by the physician, who may in like manner discover a painful area. In many cases, however, a better method is to make deep pressure with the fingers or palm, and on suddenly removing them a painful spot may be detected; the pain being caused by a sudden change in the position of the bowels. Every changed position of the intestines or other abdominal organs, may cause pain: hence, in adhesions to the stomach, pain may be felt after a full meal; pain several hours later, may indicat adhesions to the colon; pain on coughing, or quickened inspiration, a perihepatitis; pain at the end of micturition, a peri-cystitis. Pain, of varying degree and duration, was, in Dr. Jacobi's opinion, a very frequent symptom in chronic peritonitis. The seat of the pain would vary with the location and extent of the lesions. Extensive pelvic peritonitis might give rise to pain only during defecation, sexual intercourse, or micturition. The pain of peri-cystitis resembled that of vesical catarrh in coming on when the bladder was about one-half emptied, but differed in being more localized above the pubes, and more readily detected by pressure. In some cases the pain of chronic peritonitis could not be distinguished from that of flatulent colic; indeed, peritonitis by interfering with peristalsis, may cause not only flatulence but twisting of the gut and stenosis.

The remainder of Dr. Jacobi's paper was devoted to the subject of tabes mesenterica. That there were several distinct varieties of this disease he thought was proven by the histories and symptoms of different cases. Besides the simple infiltrations of the mesenteric glands causing tabes mesenterica, chronic tubercular peritonitis would produce the same symptoms. Recognition of the latter condition was usually difficult, but in some cases it could be determined with certainty. Of course, in such the prognosis would be fatal; in others uncertain.

DR. FRANCIS DELAFIELD spoke of the frequency with which chronic peritonitis arose for diagnosis, how many mistakes were made concerning it, and of its great importance. He divided the cases into three classes; those in which there were simple adhesions of connective tissue, those in which there were both adhesions and serous or purulent fluid, and the cases in which there was diffused thickening with fluid, but without adhesions. The first

condition was often not detected until the autopsy. When in addition an enlarged liver existed, it was frequently confounded with tubercular peritonitis. Other conditions, from which it was difficult to distinguish this class, were irritable colon and dilated pylorus. The second closely simulated carcinoma and tubercular disease of the peritoneum. The third class was difficult to diagnosticate, not only from the latter conditions but also from cirrhosis of the liver.

DR. WILLIAM H. THOMPSON spoke of the remarkably low percentage of urea in the urine of patients with cancerous disease, as a point that might sometimes be of diagnostic value.

DR. L. WEBER said that he had never seen a case of chronic peritonitis that was not infectious in character. He did not look upon the cases mentioned by Dr. Jacobi as really cases of chronic, but of acute peritonitis and its results. Tabes mesenterica, he believed, was always a tubercular disease.

Stated Meeting, October 17, 1889.

THE PRESIDENT, ALFRED M. LOOMIS, M.D., IN THE CHAIR.

DR. LEWIS A. STIMSON read a paper on

GUNSHOT WOUNDS OF THE ABDOMEN, WITH SPECIAL REFERENCE TO WOUNDS OF THE INTESTINES.

Dr. Stimson said that in upholding laparotomy for gunshot wounds of the abdomen it was not sufficient to show that some patients had survived the operation, nor that in cases operated upon such a procedure alone would have saved life, but it should also be shown that a larger proportion of patients recovered with operation than without. Even this being so, it might still be a question whether the cases to which laparotomy was adapted could be selected from among others in which operative interference was uncalled for, and consequently injurious. The speaker, after mentioning the few cases in which laparotomy had been performed for gunshot wounds of the intestines prior to the introduction of antiseptics, reported three recent cases in his service at the hospital, two of the operations being performed by himself, and one by his house surgeon; the latter patient, in whom there were six perforation of the intestines by a 38-calibre pistol bullet, died forty-eight hours after the operation. In one of his own cases a 32-calibre bullet had made several perforations; the operation, twelve hours later, was promptly followed by death. In his other case the calibre of the bullet was 22, and operation nine hours after the injury was followed by recovery. Four perforations of the intestines were found.

In the Chambers Street Hospital, between 1876 and 1889, there had been treated, without laparotomy, 13 gunshot wounds of the abdomen, with 11 deaths; with laparotomy, 12 cases and 9 deaths. In the New York Hospital had been treated, without operation, 4 cases, with 2 deaths; with operation, one case, which was fatal. At the Roosevelt Hospital, treated, without operation, 6 cases, with 2 deaths; with laparotomy, 3 cases, all of which were fatal. Thus the mortality without operation had been 65 per cent., while with operation it had been 81.2 per cent.

When a bullet penetrated the abdominal cavity, the possibility of its not wounding the viscera was so slight that it should have no influence on treatment. The symptoms were divided into three classes, namely, those common to all serious injuries, those peculiar to visceral injuries, and those excited by the pathology. Shock, though often extreme, he believed as likely to be emotional as physical.

The speaker opposed rectal injections of hydrogen gas for diagnostic purposes, as it was liable to cause extravasation of feces; and in case of doubt he believed it better to make an exploratory incision. If operative interference was to show superior results, it must be undertaken early, before the bad symptoms following shock had set in. If not done then, it should not be attempted. The argument might be advanced that the patient would die without laparotomy; but since, if delayed, he would be more likely to die with it, its performance could only bring surgery into disrepute.

Dr. Stimson closed with the statement that no rules for interference or non-interference could be drawn, and that the surgeon should be guided by his convictions in each particular case.

DR. J. A. WYETH thought that the question of operation was involved in about as much doubt to-day as it was nine years ago, when Dr. Sims read a paper on the subject before the Academy. He thought one had to be guided by the condition of the patient, situation of the wound, direction and size of the missile. The smaller the bullet the less demand there was for an operation. If the patient when first seen was weak, and there was extravasation of fecal matter, he would simply enlarge the abdominal wound for better drainage.

DR. ROBERT ABBE said that though the view was commonly held that a small bullet entering the abdomen was of less importance than a large one, experience had shown that a calibre of 22 not infrequently made a very large intestinal perforation. He agreed with Dr. Stimson and Dr. Wyeth, that where a number of hours had elapsed after the injury, lymph having formed around the wounds, drainage was all that should be attempted. Earlier, laparotomy should be done. If penetration was doubtful, cocaine or nitrous oxide were safer anæsthetics than ether, which caused vomiting. He spoke against immediate anastomosis in resection, and in favor of establishing primarily a fecal fistula. Too little, rather than too much, should be done.

DR. WILLY MEYER mentioned a case in which the bullet, entering the abdominal walls, and passing through the lung, penetrated near to the spinal column, where it could be externally felt. Though there was vomiting of blood, at the laparotomy, some hours after the wound had been inflicted, only the outer coat of the stomach was found injured, the bullet not having penetrated the mu cous coat. The patient died, but a post-mortem was not obtained.

DR. B. F. CURTIS thought statistics by one experienced operator might show a higher percentage of recovery than where laparotomy was not done. He preferred chloroform to ether.

DR. THOMAS MANLEY referred to a case which he had already reported, of four perforations of the intestine by a bullet, the operation being followed by recovery. He also mentioned two others without operation, one recovering, the other dying from internal hemorrhage. It had been argued that operation should not be attempted during shock; but he thought that if the operation was

not done then, it should not be done all, for adhesive material was very soon thrown out, and an attempt made by Nature to close the wounds; to disturb the case then would add to the inflammation.

DR. STIMSON said, in answer to Dr. Curtis, that collective experience might be of value in the selection of cases, but that proficiency in operating would have to come from general surgical experience.

CORRESPONDENCE.

LONDON.

(From our Special Correspondent.)

On Medical Education in the United Kingdom.—The methods resorted to by persons desiring to obtain the right to practise medicine in Great Britain, differ so radically from those carried out in other parts of the world, and are so little understood by many Englishmen themselves, that a few words on the subject may not be out of place at a time when Americans seem to be coming more frequently to London for medical training.

Here, when a man chooses the career of a medical practitioner, the first thing to be done is to get his name registered as a medical student; and no medical studies are allowed to be reckoned until this necessary step has been taken. Before he can be registered, the intending student must produce evidence of having passed a preliminary examination in English, Latin, elementary mathematics, and elementary mechanics, and in one optional subject, a choice being given him between Greek, any modern language, botany, or elementary chemistry. This examination is by no means formidable, and many boys pass one that is accepted before leaving school.

The registration is accomplished under the auspices of the General Medical Council, a body charged with the supervision of all matters pertaining to medical education and registration, and the student will have no further official relations with this august body until he presents himself with his diploma or licence to practise, which he must register before he can obtain his full privileges as a duly qualified medical practitioner; before effecting this registration he will have to pay a fee of five guineas (about twenty-six dollars), and he will then, and not until then, be entitled to hold appointments in the public services, sign certificates, and give evidence in the law courts, which an unregistered practitioner, no matter what diplomas or medical degrees he holds, cannot do.

Between the initial and the final registration a period of at least forty-five months must elapse, comprising at least four winter and three summer sessions, and the student must have passed examinations satisfactory to the Medical Council in all the main branches of medical knowledge, and his diploma or licence to practise must entitle him to practise in medicine, surgery, and midwifery. This latter requirement is quite a modern innovation—in fact, it is only of two years' standing. Formerly there were many bodies which could only give what was called a single qualification—*e. g.*, the College of Surgeons, which could only confer upon its members the right to practise surgery. This qualification alone is now not registrable, and, consequently, the College of Surgeons has entered into a combination with the College of Physicians, and the two bodies conduct a joint examination, at the conclusion of which, if successful, the student will have the necessary double qualification and can have his name placed on the register.

There is abundant scope for choice as to the channel through which the qualifying degree or diploma is to be obtained; the decision is not, however, so difficult as it may seem when looking at the list of institutions, and is probably determined in great measure on personal grounds. The bodies which have the power of giving qualifications may be conveniently divided into two groups, viz., those which are educational as well as examining bodies and those which only examine. To the former group belong most of our universities, in fact all but one, They are, in England, the Universities of Oxford, Cambridge, Durham, and the newly created one in Manchester, the Victoria. Scotland boasts of those of Edinburgh, Aberdeen, St. Andrew's, and Glasgow; whilst Ireland has two, viz., Trinity College, Dublin, and the comparatively modern Queen's University. The licensing bodies which only examine, are, the London University, the Colleges of Physicians and Surgeons, and the Society of Apothecaries, in England. In Scotland there are the Colleges of Physicians and Surgeons in Edinburgh and the Faculty of Physicians and Surgeons in Glasgow; these three bodies have amalgamated to hold a conjoint examination in the same way as those of London; and in Ireland there are the Colleges of Physicians and Surgeons, and the Apothecaries' Hall. I believe that the two latter have arrived at some form of conjoint examination arrangement.

The only portal to our register is through one or other of these examining bodies, so that no foreigner, including thereby any one from one of the colonies, can become a legally recognized practitioner in this country until he has submitted himself to the ordeal of examination at one of the above-mentioned institutions; but having once succeeded in getting his name on the register, he can then register his foreign degree or diploma, if obtained at any recognized university. This is a concession that was only obtained two years ago, when the last Medical Act was passed.

In the case of the Scottish universities it is the rule for a student to spend his whole medical career at his university; but in England this is most unusual. At Oxford it would be almost, if not quite, impossible, and at Cambridge it is almost unknown for a medical student to complete his whole medical career, the custom being for the last two or three years to be spent either in London or at one of the chief provincial medical schools; whilst in the case of those who are not entered at one of the universities mentioned in my first list, the choice of a medical school becomes an imperative necessity. Here, again, he has plenty of choice, as in London there are eleven more or less fully equipped schools, whilst in the provinces he can choose between Manchester, Liverpool, Birmingham, Leeds, Sheffield, and Bristol; in Scotland, Edinburgh and Glasgow, and in Ireland, Dublin, offer facilities for the education of those who are unable or unwilling to enter at one of the universities.

ST. LOUIS.

To the Editor of THE MEDICAL NEWS,

SIR: At this season of the year all are interested to know something of the prospects of the medical col-

leges in the various sections of the country. Here in St. Louis we have four colleges of the regular school of medicine, viz., The Missouri Medical College which was founded by the celebrated Joseph Nash McDowell, and which is now a department of the State University; the St. Louis Medical College, with which was identified in its early years the celebrated Dr. Charles Pope, and later the no less distinguished Dr. John T. Hodgen; the College of Physicians and Surgeons, founded by Dr. Louis Bauer; and last, the Beaumont Medical College, named from the eminent physician whose observations upon Alexis St. Martin have made his name familiar to every student of physiology.

Of these colleges "The Missouri" requires the legal "three years of study and two courses of lectures," and the Dean reports two hundred students as having matriculated this year.

St. John's Hospital is adjoining the college building, and supplies material for clinical lectures, the hospital staff being composed of members of the college faculty. The college building is on the northeast corner of Lucas Avenue and Twenty-second Street.

The St. Louis Medical College is situated much farther down town on the northeast corner of Clark Avenue and Seventh Street.

The faculty of this school have long taken an advanced position with reference to the proper requirements for a medical education, and have for several years past required for graduation an attendance upon three courses of lectures and a preliminary examination of all who cannot offer either a college or high school diploma or a first-grade teacher's certificate. The Mullanphy hospital on Grand Avenue is under the control of this school and affords a large amount of valuable clinical material.

The number of matriculants reported from this school is sixty.

The Alumni Association has for the last two years been very successful in arousing and keeping the interest of its members. They have each year a course of lectures by eminent scientists and others.

The College of Physicians and Surgeons, situated on the corner of Eleventh and North Market Streets, was organized in 1878, under the leadership of Dr. Louis Bauer. After continuing for some four or five years most of the members of the original faculty resigned and Dr. Bauer reorganized the faculty, and at present the members are mostly men new to professional honors, though several have been prominent in the councils of the St. Louis Medical Society.

One curious feature of the present organization of the faculty is that an ex-president of the St. Louis Medical Society and one who recently narrowly missed achieving that distinction, sit side by side with a member of the profession whose efforts to secure admission to that society were frustrated, largely by the active opposition of the former.

The number of matriculants reported from this school is about one hundred and twenty-five.

It may be of interest to mention that among the first corps of instructors in this college was Dr. P. H. Cronin, whose murder in Chicago a few months ago has attracted so much attention throughout the country.

The youngest of the regular medical schools in our city is the Beaumont Medical College, which has just entered upon its fourth year of lectures, and has been met on the threshold with a great calamity.

The first step taken by the members of the faculty when they effected an organization four years ago was the purchase of a building on Walnut and Sixteenth Streets, which had been erected for a church some years before, but vacated by the congregation. The site selected was an eligible one and by the expenditure of a few thousand dollars the building was admirably adapted to the purposes intended by its new owners.

The school has prospered and graduated three classes.

On Tuesday night, October 8th, the entire building was consumed by fire, together with the museum of pathological and anatomical specimens belonging to Prof. Waldo Briggs, most of which were prepared by himself, and a costly series of wax models valued at several thousand dollars.

When it became known that the Beaumont College building had been burned, the faculties of the St. Louis College and of the College of Physicians and Surgeons, tendered the use of lecture rooms in their buildings until other permanent arrangements could be made. Both of these offers were, however, declined with thanks and the faculty have arranged to deliver their lectures in the building on the corner of Fourteenth Street and Lucas Place, formerly a private residence. New buildings will shortly be erected, but whether on the old site or farther west has not yet been determined.

The number of matriculants enrolled before the fire was between sixty-five and seventy.

Besides the above mentioned regular medical schools there is the "St. Louis Post-Graduate School of Medicine," some of the professors in which are connected with one or other of the graduating schools.

A rumor is afloat that the faculty of the Post-Graduate School of Medicine would be willing to dispose of their handsome building to the faculty of the Beaumont Medical School, but for the opposition of certain members who are also connected with the Missouri school and who object to the location of a rival but two blocks away.

THE RADICAL CURE OF HAY-FEVER.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of October 12th, your correspondent A. H. L. directs attention to "The Radical Cure of Hay-fever with Chromic Acid."

The article is certainly interesting reading, and the statements of the author inspire one with the conviction that he has made frequent applications of chromic acid, in weaker or stronger solutions, to nearly the entire surface of the nasal passages. What is not at all clear, however, to the careful reader, is upon what basis of accurately observed cases the writer has acquired the right to affirm that he has discovered in the use of chromic acid the radical cure of hay-fever. What the writer of the article has apparently accomplished with chromic acid, has been done, as I believe, with more than one agent by others. I have ameliorated in a marked degree numerous cases of hay-fever by the judicious use of the galvano-cautery. There is nothing new about this, since it is the common property of the profession. I have, on several occasions, effected notable and enduring benefit by applications of carbolic acid and glycerine, or carbolic acid and vaseline, to nearly

all parts of attainable nasal mucous membrane. I have never yet had what I have been able to regard as a *permanent* cure of hay-fever, by any topical agent. My own experience at the present time of writing is, I am convinced, the experience of many of the best observers in our profession—among those who are throat specialists.

It seems judicious, therefore, before any method of treatment, especially if it has merely the aspect of novelty, is relied upon to *reduce*, if not *entirely obliterate*,[1] some of the most difficult cases we, as specialists, are called upon to treat, that forthcoming facts should be numerous and followed up carefully during several spring, summer, or autumnal seasons.

Truly yours,

BEVERLEY ROBINSON, M.D.

NEW YORK, October 16, 1889.

AMERICAN PUBLIC HEALTH ASSOCIATION.

(*From our Special Correspondent.*)

To the Editor of THE MEDICAL NEWS,

SIR: The annual meeting of the American Public Health Association convened on Tuesday, October 22d, at Brooklyn Institute, and probably was the most successful gathering that the Association has ever held. Not only did it bring together representative sanitarians from almost every State of the Union and from Canada, but it also excited general attention throughout the entire country. This was made evident not only by the large number of daily papers which recognized the progress of its proceedings, but also by the unusually great attendance of the public at the general meetings. Owing to the facilities which had been provided by Drs. Raymond and Bell and their associates, everything was favorable to a pleasant and profitable meeting.

The President's Address was worthy of the occasion and of the reputation of its author. After speaking briefly of the increased adoption of sanitary measures, and of the consequent prolongation of life and increase of prosperity, he proceeded to show the social and pecuniary value of preventive and sanitary precautions, quoting from Richardson the actual results which had been attained in England. From these he showed that within a few years the mortality from phthisis has decreased from 12.67 to 9.12 in every 100 deaths; and in zymotic diseases from 23.26 to 20. If the death-rate of New York and Brooklyn were reduced to that of London, it would mean an annual saving of 15,986 lives, not speaking of the vast amount of sickness annually, which is equivalent to 32,000 years. "This lengthening of years, this relief of distress, this saving of public wealth is worth working for."

The address of Mayor Chapin showed an unusual appreciation of the relations of public health to civic and political interests; and following this, the Rev. Dr. Storrs, with his usual eloquence, demonstrated that the American investigator has well nigh reached the precision of research generally claimed for French and German savants.

In the address of President Low, of Columbia College, some very practical comments on the sanitary needs of Brooklyn in its out-lying districts were made, and Dr. Alexander Hutchins welcomed the delegates in so hearty a manner as to receive many congratulations.

The first paper presented to the Association was on the over-shading of our homes, by Dr. Parker, of Newport, R. I., which, unfortunately, added but little on those points where information is most needed. He was followed by Dr. Hibbard, of Indiana, who read a paper on clothing, enforcing the importance of "hardening," to diminish susceptibility to the changes of temperature. Dr. Jerome Walker, of Brooklyn, read a paper on the causes and prevention of infant mortality. He insisted most strongly upon good ventilation, good nursing, and attention to all sanitary details which do so much toward prolonging infant life. As an evidence that such care is not useless, he mentioned the Brooklyn Institute, in which there were 118 children not two years of age, among whom only six deaths occurred in a year. Mr. Alfred C. White, a civil engineer of Brooklyn, furnished a good paper on the relation of the dwellings of the poor to infant mortality, showing the comparative uselessness of partial measures, and the need of radical changes in tenement-houses. He quoted figures received direct from the Secretary of the Improved Industrial Dwelling Company of London, which show a marked decrease of the death-rate among the lower classes in those who were properly housed. In the discussion which followed, Prof. Bartley, of Brooklyn, was disposed to insist upon the evil effects of bad food as having quite as much to do with disease as bad dwellings. Dr. MacDonald stated that, in his opinion, cholera morbus and other causes of infantile mortality depended chiefly upon alterations in temperature.

The session of the second day was opened by a paper upon the "United States Census in Its Relation to Sanitation," by Surgeon J. C. Billings, of the United States Army, who showed the necessity of such an enumeration of population as would give the social condition and occupation of each individual, thereby admitting of a comparison of various districts. Thus, in the case of large cities, deaths occurring in hospitals should be referred to the districts in which they belong and not to the district in which they actually occur, the nationality and birth-place should also be given. In the case of deaths of colored persons the degree of admixture of white blood should be stated. Dr. Billings was followed by Dr. Hunt, of New Jersey, who read a paper upon the prevention of phthisis pulmonalis. Dr. Playter, of Ottawa, then read one upon the prevention and restriction of tuberculosis in man, and Dr. Kretzchmar presented one upon the prevention of pulmonary consumption. The paper of Dr. Hunt claimed that while certain facts as to the bacillus of tuberculosis were established, the proof of the communicability from man to man by inhalation requires investigation. The paper of Dr. Playter adopted the views of Cornet and advocated extreme measures for the restriction of the disease. In the third paper it was pointed out by Dr. Kretzschmar that in ten per cent. of phthisis cases no bacilli were found. In the discussion which followed Dr. Billings said he thought the first paper threw too much doubt upon the conclusions of certain well-known investigations and asserted that in his opinion the necessities of public health require stringent regulations.

[1] The precise words with which A. H. L. terminates his article cannot be conveniently used. The substitution of verbs for nouns will not alter the sense.

The afternoon session was held at the Hoagland Laboratory, which is admirably fitted up for biological and microscopical investigations. During this session a resolution was passed urging the importance of care in respect to the disinfection of diseased sputa.

The second evening was very profitably occupied with papers on "The Art of Cooking," by Edward Atkinson, LL.D., of Boston; on "Recent Researches Relating to the Etiology of Yellow Fever," by Surgeon George M. Sternberg, U. S. A.; a paper on "Pulmonary Observations on the Microörganism of Texas Fever," by Dr. Theobald Smith, Assistant in the Laboratory of the Bureau of Animal Industry, Washington; and another by Dr. D. E. Salomon, Chief of the Bureau, on "Some General Observations on Texas Fever." Dr. Atkinson, with his large fund of information and with simple utensils illustrated the economics of cookery and showed how much is yet to be done for economy and the betterment of health. Dr. Sternberg gave an interesting account of his recent researches on yellow fever which he illustrated by means of the stereopticon. The papers on Texas fever were also well illustrated and the subjects attractively presented by the authors. It is certainly a disease with marked peculiarities and very evidently dependent upon a special microörganism, but its relation to anthrax is as yet indefinite.

On the third day Dr. Benjamin Lee, of the State Board of Health of Pennsylvania, read a paper on the "Annexation of Cuba as a Sanitary Measure," and Dr. S. W. Latta, of Trenton, one on "Railway Sanitation." During the general meeting resolutions were adopted looking toward a representation in future of all the American nations. An encouraging sign was the initiation of a large number of new members. Dr. H. B. Baker, of Michigan, was elected President. The next annual meeting is to be held at Charleston, S. C.

NEWS ITEMS.

Polyclinic Therapeutical Society.—At the last meeting of the Polyclinic Medical Society, a therapeutical section was formed from among the faculty, clinical assistants, and students of the Philadelphia Polyclinic, the object of which shall be the scientific and systematic investigation of the action of drugs and remedies in the cure of disease. The executive committee of this section formulates a programme of practical work for each meeting, decides what drugs or remedies are to be investigated during the following months, devises specific directions in regard to such investigations, and supplies printed blank forms to carry the work into practical effect, with which any member of the profession, who desires to take part in the research, will be furnished free on application. These blank forms are filled out by the observer and returned as soon as the investigation is completed, which will be at the end of one, two, or three months; at which time the reports will be analyzed and presented at the following meeting with due credit to each contributor, results being published in the medical journals. It is believed that a combined effort of this kind will not only benefit those who are engaged in the work, but will be of great value to practical therapeutics.

Dr. Mays read a paper on *Olive Oil in Gall-stones*, and olive oil in this affection was made a subject for investigation during the next two months. All communications in reference to this subject should be addressed to Therapeutical Section, Philadelphia Polyclinic.

ACCORDING to the *Maryland Medical Journal*, New York city employs and pays forty physicians to visit the poor in the tenement houses. This is an improvement over the usual forms of charity.

Sterilized Milk Delivered to Patients in their Dwellings.—Since August 1st, sterilized milk has been furnished to children under treatment at the Philadelphia Polyclinic. The milk is sterilized by the Visiting Nurse Society of Philadelphia, and taken to the child by the nurse in attendance, in the bottles in which it is prepared. Milk and bottles are furnished the parents at cost. The results have been excellent.

The Hudson River State Hospital.—The New York State Hospital, at Poughkeepsie, has received an appropriation of $40,000, with which to build additional accommodations for the resident staff and one ward for the isolation of infectious or suspicious cases.

Diphtheria in Central Illinois.—A dispatch from Chicago states that the public schools at Illiopolis have been ordered closed on account of the prevalence of diphtheria, from which there have been several deaths. The disease has been reported from several other points in central Illinois.

Accident to a Physician.—DR. A. A. CLOUGH, of Denver, Colorado, who has been east to attend the Convention of the Public Health Association, on Sunday last, while walking in the streets of New York, was taken suddenly ill with vertigo, and, falling heavily, suffered concussion of the brain. He was conveyed to Bellevue Hospital.

Foreign Necrology.—DR. LIEDESDORF, the eminent alienist of Vienna, is dead.

DR. PHILIPPE RICORD, of Paris, the authority in venereal affections for fifty years, died on the 22d inst.

DR. IRA HAWLEY BARTHOLOMEW, of Lansing, Mich., died on the 18th instant, at the age of sixty-one years. He was, in 1871, the President of his State Medical Society, and thrice the Mayor of his city, besides holding responsible pension offices under the general government.

Another Continental Anglo-American Society.—In THE NEWS for the 19th ult. an item was published on the Society, in Paris, of English and American physicians. A somewhat similar organization has been begun at Vienna to promote the interests of the English-speaking physicians, who resort to the University in considerable numbers; there were over one hundred American physicians enrolled there last year. It will be named the Anglo-American Vienna Medical Association.

THE American Public Health Association adjourned on the 25th inst., after a successful and interesting meeting.

Suicide of a Physician.—DR. J. A. SHANNON, a practitioner of Canandaigua, New York, was put under arrest

on account of running over a pedestrian, for which he was in part responsible. Filled with alarm and chagrin at the catastrophe, he took some morphine; the amount taken was an overdose, and death ensued. The injured person is said not to have been seriously hurt.

The Bishop Case.—According to the *New York Medical Journal* the board of trustees of the Society of Medical Jurisprudence and State Medicine has taken action that has resulted in the passage of a resolution by the society expressive of sympathy with the medical men under indictment for the part taken by them in the post-mortem examination of the late Dr. Bishop. We are sure that they have the sympathy of the entire profession also. Their action was at most only a technical offense, and the trouble that has already come upon them in consequence of it undoubtedly constitutes as much punishment as any fair-minded citizen would wish to see inflicted on them. We think, therefore, that their further prosecution might be stopped without any disavadntage to the public welfare.

A Report on Cigarettes.—Mr. Willis G. Tucker, in his report to the New York State Board of Health, on the result of his examination of various popular brands of cigarettes, says that careful analysis of tobacco and paper failed to reveal any poisonous ingredients, other than the tobacco itself, and that most cigarettes contain pure tobacco and good paper. The evils of cigarette smoking are due to the fact that cigarettes are cheap, convenient, and can be used in large and excessive quantities, that the smoke is usually inhaled, and that children and immature persons so freely use them.—*Columbus Medical Journal.*

A Dealer in Fraudulent Diplomas.—We learn from the *New York Medical Journal* that the arrest of "Dr." Henry Freeland, the alleged head of seven bogus medical colleges, took place in Maine October 2d. He is to be tried at Portsmouth, N. H. It is not known how long this diploma-mill had been working before its exposure was published in one of the Boston papers, but one of the fraudulent diplomas is known to have been issued early in 1888. The buyers of diplomas were charged from $50 to $300. It is a partial compensation to note that these frauds are brought to book more speedily than was formerly the case; but even now the punishment that will be visited upon this dealer in diplomas—if he is punished—will be only that for an illegal use of the mail, rather than for a crime against his dupes or the public at large. In other words, the General Government must be invited to intervene and prosecute the accused for an act which is not, or might not be, essential to the carrying on of an extensive business in fraudulent credentials. The truth is that comparatively few States have any laws that are competent to the punishment of this kind of iniquity; and this shrewd indirection about the "illegal use of the mail" is a decidedly fortunate circumstance for some of them.

WE understand that the Faculty of the College of Physicians and Surgeons of New York have decided to raise the tuition fee from $150 to $200 a year. It seems to us that this is highly proper. By means of such a change the residents will be given facilities for learning which only a large tuition fee can cover. Further than this, examination of the catalogues of several of the other technical teaching bodies, such as the School of Mines of Columbia College, charge $200, though the expenses of the course are far greater in a medical school than in such an institution. We doubt if any branch of teaching requires more skill and study than that necessary to the thorough medical lecturer, nor one which of necessity forces him to keep abreast of the times so constantly, yet the fees charged and the salaries paid are in many institutions exceedingly small. As long as the teaching bodies of this country are not endowed, it is but fair that they should receive a *quid pro quo* equal to their deserts. So far as we know, the Medical School of Harvard University is at present the only institution charging $200 a year in the country.

A Truly Woman's Hospital.—We learn that under the patronage of the Princess of Wales London is to have still one more hospital, which is, however, to differ very materially from those heretofore founded. Not only are all the patients to be women, but all the physicians, surgeons, and apothecaries connected with the establishment are to be of the softer sex.

Medical Students in Germany.—The *Buffalo Medical and Surgical Journal* states that the number of students attending the medical schools of Germany has increased to such an extent in the past few years, that the Government has been petitioned to open new schools of medicine. The Government refuses to do this, but proposes to remedy the evil by exacting higher tuition fees, and lengthening the course of study required for graduation.

"Flint Disease."—A pulmonary affection peculiar to those who work in quarries received the attention of Dr. Forwood in his address before the Medical and Chirurgical Faculty of Maryland at a recent meeting of that body. He claims that it is frequent and fatal among the quarrymen in Hanford County. Few escape permanent damage to the lungs if they are engaged in the quarries even for one year.—*Memphis Journal of the Medical Sciences.*

Rabies.—The number of dogs in England officially reported during the week ending September 28th, as afflicted with rabies, was eight, against six in the previous week; of these, six were killed and two died. The distribution was as follows: Middlesex (excluding London), three; Surrey (excluding London), two; and Chester, Hertford, and York (West Riding), one each. No cases were reported from London proper.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, NOVEMBER 9, 1889. NO. 19.

ORIGINAL LECTURES.

ECTOPIC GESTATION.

An Address delivered before the Northumberland and Durham Medical Society, on October 4, 1889.

BY LAWSON TAIT, F.R.C.S.

MR. PRESIDENT AND GENTLEMEN: The subject of ectopic gestation, although rather a special one, occupying in the practice of each individual physician no very large place, is yet of great importance, for when such cases are met they place the practitioner in a position of enormous responsibility, occurring as they do in the most unexpected ways and times; so that perhaps no subject is in reality of more interest to the general practitioner. Ectopic gestation has, too, this additional claim upon our attention, that although it lies in one of the by-paths of practice, still its mysteries have been unravelled in a remarkably short space of time, not only in pathology, but also in the method of dealing with it satisfactorily to the relief of suffering and the saving of human life.

The term *ectopic* gestation should be used to the exclusion of the older term extra-uterine gestation or pregnancy, for several reasons. First, because there is a special variety of this condition which is not covered by the term extra-uterine pregnancy, and it is always well when we change our nomenclature to do so in the direction of greater precision. We are in the habit of altering our nomenclature often enough from mere fancy. With each incoming school of pathology there comes a new system of nomenclature, with the result of confusing those who have just left the schools where the latest doctrines were taught.

I do not, therefore, propose this change without a sound reason for doing so, which is, because the variety of ectopic gestation known as the interstitial is brought within the scope of our term. Then, again, the cornual form of pregnancy was regarded as extra-uterine, which is in reality not the case, and it is undoubtedly ectopic. Therefore, as we have two conditions which are included in the word ectopic, and which are not included in the term extra-uterine gestation, I maintain that the new word ought altogether to replace the older for the sake of precision and comprehensiveness.

It is difficult in dealing with a subject like this, to see clearly the best line to follow. We may take either the pathological or the clinical classification, and I am not sure that the latter is not the best, as I am dealing with the subject for the purpose of helping those who have no time and no opportunity of following out the intricate details of pathological research, men who are engaged at the bedside, but to whom it is important to know what they ought to do. I will, therefore, follow a clinical course, for, although it may lead to some confusion of order, that disadvantage will be compensated for by clearness in addressing those to whom the subject is new, or to whom the term extra-uterine pregnancy simply involves a confused notion of a condition far different from that usually met with at the puerperal bedside.

What, then, is the commonest condition with which we have to deal in cases of ectopic gestation? It is unquestionably a catastrophe so terrible, that nothing can be compared with it short of a railway accident. One of your patients is suddenly seized with pain in the abdomen. The pain becomes more and more severe as the hours advance; she presents a strange, death-like pallor; she vomits as she lies on her back; the pulse disappears; the skin becomes cold and clammy, and though she is clearly dying, there is no very distinct ground upon which you can make your diagnosis, and until you inquire into the history you can be positive of nothing but the pain. So sudden is all this, that most of the men who have seen such cases have seen them pass to the post-mortem table or the grave without a complete diagnosis having been made.

Such are the appearances of a woman who is suffering from rupture of the more common form of ectopic gestation. Your patient dies, if not relieved, probably with the true condition unsuspected. A post-mortem examination is made, the abdomen is found full of blood, one Fallopian tube is found with a small swelling which is the source of the extravasation into the peritoneal cavity. You will find pints of semi-coagulated blood, and when you search for the source of the hemorrhage you discover it in a rent in the Fallopian tube, from the effects of which your patient has died. This is what we call a ruptured tubal pregnancy, and concerning the pathology of which the greatest confusion existed until very recently; in fact, I may say with regard to some of the senior members of the profession the confusion exists at the present time. In support of this assertion I may refer to a clinical lecture which appeared in the columns of the *Lancet* a few weeks since. The lecturer opened his observations with this remarkable sentence: "That only ignorant audacity could presume to make clear the pathology of extra-uterine pregnancy." Now, I do not know whether it is ignorant audacity of the one that can make such a charge, or ignorant audacity of the other for attempting to make clear that which was enveloped in obscurity; but if I can succeed in inducing you to believe that the pathology has been made clear, the treatment and practice successful, then my mission will have been accomplished. We had, until quite lately, an inherited belief that stood in the way of our understanding the pathology of these cases completely, or indeed at all. Many years ago experiments were made by Le Coste with the view of ascertaining the precise position at which the ovum and spermatozoa met and impregnation took place. Unfortunately Le Coste made his experiments upon animals with a bifid uterus, and this has been the source of all the trouble, for the human uterus is single, its bifidity being represented by struc-

tures which are not uterus at all—the Fallopian tubes. He found that impregnation took place high up in the bifid organ and wrongly thought that this was the Fallopian tube instead of the uterus. This led to the mistake that has existed so long. Normally, the Fallopian tube is lined by a layer of ciliated epithelium which was supposed to have for its function the sending of the ovum down into the uterus, and it was assumed that this function was fulfilled after the ovum had been impregnated. We cannot make experiments on human beings as upon the lower animals, but we have an unfortunate habit in many instances in making experiments upon the latter and neglecting a precaution which the physicist and the chemist always adopt, viz., of making sure that the conditions of the experiment are the same. Now, the conditions of the experiment in women would be found on careful examination not to be like those on animals, and the absence of this ciliated epithelium is the precise condition that was neglected. We know now, as nearly as possible, from the investigations of pathologists and from direct observations which will doubtless be completely elucidated before long, that another function of this ciliated epithelium is to prevent the entrance of the spermatozoa into the Fallopian tubes. So long as there is a layer of intact epithelium impregnation takes place only in the uterus. I will not go into the arguments upon this point, for the time will not permit, but some recent researches by A. W. Johnstone and Bland Sutton make the above statement very positive. This is the key-note of the subject which if once grasped makes all perfectly clear. When the Fallopian tube has been denuded of its layer of ciliated epithelium, these observations show clearly that its surface becomes exactly like that of the uterus, to which the ovum would normally become attached. If there has been a destruction of the ciliated layer which is not reproduced, then we have the possibility in the first place of a spermatozoön entering the tube, and, what is still more important, after impregnation the ovum may become attached to the walls of the tube, as it normally is to the walls of the uterus. These points granted, the whole matter becomes clear, notwithstanding the cries of "ignorant audacity."

We will assume, then, that this later pathology is an improvement upon the older, that impregnation takes place in the cavity of the tube, and that the attachment of the ovum takes place upon the wall, in consequence of the loss of the ciliated epithelium. Here, however, let me diverge into the clinical aspect for a moment, and tell you the usual history of these cases. The great majority of the cases occur in women who either have never been pregnant, though married for years, or who have had two or three children, followed by an interval of sterility of some years' duration. This one clinical fact shows clearly enough that the procreating mechanism was out of gear. Then the examination of the tubes will show distinct evidence of mischief. One authority, Dr. Griffith, of St. Bartholomew's Hospital, told me the other day that he was perfectly satisfied as to the correctness of my conclusions, that desquamative salpingitis had been well worked out and proved. In many instances, then, you have a clear history of tubal disease. I cannot go further into this point, because it would take up too much time, but the history generally shows that damage has been done to the tubes prior to the abnormal gestation. Here, then, we have one proof of the correctness of our views. We will now turn to the progress of each condition. Impregnation has taken place, the ovum has become attached to the walls of the tube and is growing. We have now to speak of the conditions based upon divisions of the tube, which are largely artificial, but, artificial though they be, they have many conveniences to recommend them. You are all familiar with the appearances and anatomy of the Fallopian tubes. You know that there is a small part which is buried in the uterine substance, that there is another part which is perfectly free, except that it is kept in place by a meso-salpinx, which is a duplicature of the peritoneum, running up one side and down the other, thus enveloping the tube, but allowing of perfect freedom of movement. Now, as this duplicature of the peritoneum is one of the most important structures in the whole female body, for the purposes of the present discussion I ask you to bear it well in mind. We then come to the division known as the infundibulum, which is supposed, at intervals more or less periodical, to be applied to the ovary for the purpose of receiving the ovum on its way into the uterus. Whether this view is correct or not, remains to be proved. At one time I myself believed that this did take place, but I am now disposed to regard it as mythical. It matters little, however, for our purpose whether it takes place or not.

Another point to be discussed is the view that impregnation sometimes takes place in the ovary, the spermatozoa travelling up the Fallopian tube, spreading themselves out over the ovary, and impregnating the ovum at the moment of its escape. This can be seen easily enough in the lower animals not provided with Fallopian tubes, and the error arose from the application of these observations to the human female. The proof rests upon the answer to this question: Does ovarian pregnancy ever occur? Is there such a variety of ectopic gestation as ovarian? Well, I have examined personally all the specimens to which I have had access, and have investigated every such case that has ever been put upon record, and all I can affirm is that, so far, no such occurrence has been proved to have taken place. The proof which we demand for an occurrence of this kind is, that a cavity be found in the structure of the ovary, the walls of the cyst consisting largely, if not entirely of ovarian tissue, as demonstrated by the microscope, and that the cyst contents consist largely of fœtal structure or placenta. If neither of these three conditions can be substantiated, the case must be put aside and disregarded as evidence. I do not mean to say that the thing is impossible, but I do say that, as yet, it has not been satisfactorily established. Some of the cases published as such, are based on ludicrously erroneous evidence. Not long ago, in the *Transactions of the American Gynecological Society*, a case was recorded which, from the history, was palpably a case of dermoid tumor of the ovary. Yet it is described and put on record as a case of ovarian pregnancy. Great care is therefore required in admitting such cases as evidence. It does not matter for clinical purposes whether it is proven or not. If it is, the subject is all the more interesting, but I do not suppose it would differ in its clinical relations from a tubal pregnancy. The patient would be exposed to the same dangers, and it would have to be dealt with in the same manner.

As regards tubal pregnancy, there is an ample supply

of specimens which prove its occurrence in all the three situations—the infundibulum, the middle part of the tube, and the interstitial part. Now, I may dismiss the interstitial variety with a few words. First of all, it is the rarest; for although I have had perhaps the largest experience of any one man with this curious displacement, I have only seen one such case, and I know of only six mounted specimens in this country in which this lesion indubitably exists. It is rare and inevitably fatal, for we get no notice as to when rupture is going to take place, and the patient dies before anything can be done. The period at which rupture takes place—that is, when the tube gives way—may be deferred as late as the sixth month, and seldom occurs before the fourth. The tissues are then so vascular that it is only a matter of a few minutes before the patient dies. Alluding particularly to my own case, I fail to see how any human power could have saved her, even if we had been there at the time. The condition is simple enough. An attachment of the ovum to the tube has taken place within the structure of the uterus. There it remains, expanding nearly always in an upward direction, and the rupture takes place at the fundus of the uterus. The tear is extensive, usually four or five inches in length, and the hemorrhage is consequently terrific. Nothing could save the patient but hysterectomy, and by the time the diagnosis is made all chance of an operation so grave as hysterectomy proving successful would be gone. The specimens I have seen are all identical in character, and it is very fortunate that a variety in which we can do so little, and in which the consequences are so terrible, should be so rare.

We may then pass on to the consideration of the other two varieties. I will dismiss the infundibulum variety by saying that it too is extremely rare. I only know of two well-authenticated cases—I will not say on record, for such cases are generally recorded by gentlemen who have too little experience with the methods to be followed in establishing these cases, and of the points to be demonstrated. Therefore, when we see figures, except by skilled anatomists or experts in pathology, we have to discount the statements made concerning them. For instance, Dr. Granville is quoted by Dr. Campbell, as having proved ovarian pregnancy up to the hilt, and actually quotes his pamphlet and plate as quite satisfactory. Now Dr. Granville's book is very rare, as it took me four or five years to find a copy. When I did so, I found the description was absolutely incorrect; there was nothing in the plate at all to represent either placental or fœtal tissue, and the text was as follows: "That Dr. Granville was assured by Sir James Clark that, thirty years before, he had seen a fœtus hanging free in the cavity." I have seen the specimen but can make nothing of it. Where the specimen is in a museum, properly put up, you can go back a century, as is the case with the specimens so admirably put up and described by Hunter. Therefore I say that there are only three such examples. It would matter very little, however, if there were more—they would be merely pathological curiosities. Its bearings are precisely the same as the variety now to be spoken of, viz., pregnancy in the middle part of the tube. Let me now remind you of the structure of the Fallopian tube, for this is a fact of the very greatest importance. There is the lining of mucous membrane covered with ciliated epithelium, and outside is the peritoneal investment. Between them are two clearly defined layers of muscular fibres, longitudinal and circular. The mucous surface is of importance, because its denudation, in our belief, is the primary cause of the misplacement. The muscular coat has probably some peristaltic action in assisting the ovum and fluids down the tube. This movement is often seen in operating upon the uterus for myoma, when the vermiform movement follows the removal of the tubes. Of all the layers, however, the peritoneal is of the greatest importance, for according to the way it behaves, or, rather, how it is treated, the ultimate issue depends. The ovum, to start again from the point of its growth, continues developing, and though it is true that the Fallopian tube is capable of a certain amount of distention, provided the walls are not damaged, the distention is limited. The tube is probably capable of the same amount of distention as the gall-bladder or the urinary bladder.

Peaslee narrates a case in which the Fallopian tube was dilated to such an extent as to hold thirty pounds of fluid. I have myself seen thirteen and fourteen ounces of fluid. On the walls of the tube, however, becomes developed an organ which weakens them—the placenta. The formation of large venous sinuses on the site of the implanted placenta diminishes the ability of the tube to distend, and it tears. This coincides with the formation of the "cake" of the placenta. Up to a certain point the placenta is diffused as a villous layer, but in about the eighth week it becomes restricted to one spot, when you get what is called the placental cake. I do not know that the development of this placental cake has an all-powerful influence in determining the rupture, but it certainly exercises some influence. The rupture always take place before the time of the limit of the formation of this placental cake, and the time of the rupture is, therefore, clearly limited to the twelfth week. I have never met with a specimen later than that. Now, the rupture may take place in one of two directions. In one case the placental cake may have formed upon the site where the layers of peritoneum meet, or, on the other hand, it may form upon some part of the wall which is closely surrounded by peritoneum. In the first instance, the rupture takes place into the broad ligament; in the latter, into the peritoneal cavity. Although I have been preaching on this subject for twelve years I have failed to get my professional brethren to see what an enormous difference this makes in the subsequent progress of the case. It means that if this hemorrhage takes place into the peritoneal cavity it is uncontrolled. If you put a bleeding surface under water you remove one of nature's great hæmostatics, coagulation. If you have bleeding into a confined space which is capable of only limited extension, especially if that space be filled by something that is capable of inducing coagulation, such as irregularly distributed muscular fibres, you have a strong means of arresting hemorrhage; whereas if the cavity be indefinite in its capacity there is a corresponding absence of the cause of coagulation. This is an explanation of the different endings of these cases. In rupture into the peritoneum the bleeding practically goes on unchecked. Every one knows that if a vessel has not been properly tied or if a ligature has slipped after ovariotomy, there are no means of checking the hemorrhage, because the blood does not properly coagulate, and a little vessel from an omental adhesion, which would not be of the

slightest consequence in an amputation, would be sufficient to cause death after an ovariotomy. You have thus in the one case every possible condition favorable to the continuation of the hemorrhage, while when the rupture takes place into the cavity of the broad ligament you have all the conditions favorable to the arrest of the hemorrhage. Hence the latter is rarely fatal. Here, then, we have a great natural difference between these two varieties of tubal pregnancy. One has no natural tendencies toward cure, and the other has all. In the one case you have to do with a patient who will die inevitably unless you interfere. In the other you have a condition which you may safely leave alone. In the one case you have hemorrhage into the peritoneal cavity, and in the other you have it extra-peritoneal into the broad ligament, and I think I have made it clear that the prognostic importance of the two is as different as can well be.

Now as to the diagnostic difference between the two. It is very simple, if you think for a moment what the relations of the broad ligament are.

You have to recognize two different varieties, one of intra-peritoneal and the other of extra-peritoneal hemorrhage. Now, intra-peritoneal hemorrhage may arise from various causes, such as injury, or from imperfectly checked bleeding after operation. But excluding such causes, and speaking from my own experience as a gynecologist, it has only one origin, and that is, rupture of a tubal pregnancy. Mark you, I do not say that there are no other causes, but I have never met with them. To my mind, for all practical purposes, intra-peritoneal hæmatocele and ruptured tubal pregnancy are one and the same thing. And now, what are the symptoms and physical signs? Concerning intra-peritoneal hemorrhage I may say, hardly any signs at all. You palpate gently and you have obscure fluctuation, very difficult to make out even when the amount of effused blood is large. Percussion gives nothing very remarkable. You get dulness here and resonance there, but nothing to indicate positively what is the precise condition. Vagially you feel an indistinct boggy swelling in Douglas's pouch, but there is nothing very clear about that either. The relations of Douglas's pouch are practically unaltered. In the extra-peritoneal variety there may be fifty different causes, such as sudden arrest of menstruation by chill, etc., but I fancy the worst cases I have seen of this kind have been caused by a tubal pregnancy rupturing into the broad ligament. Here the signs are positive, and in the first place you have a smooth, tense, rounded tumor in the pelvic region, sometimes reaching almost, or quite up to the umbilicus. This is the broad ligament dissected upward and distended by the effused blood. There is distinct fluctuation. On examination of the pelvis you have a condition which is absolutely distinctive, viz., the whole of the roof of the pelvis is fixed, and coming down from each side of the uterus you have processes of induration extending. You have a more or less flat-topped roof and pillars down each side, which indicate the burrowing of the blood along the pelvic fascia. Then there is another condition almost certain to occur if the case be a severe one, viz., stricture of the rectum. I had such a case yesterday. Remember that the broad ligament comes off from the uterus, it gradually opens one fold on either side of the rectum, and if blood dissects it up, one of the roads will be to the front of the rectum and around it, and you have an annular stricture of the rectum, which will not disappear for many months. Now let us go back to the history. First, the history of sterility, then the suspicion of pregnancy. The patient *thinks* she is pregnant. There may be irregular discharges, sometimes profuse menorrhagia, but not often a clear history suggesting pregnancy. But if you have the acute condition, what you wish to determine is, is the blood in or out of the peritoneum? And this you can determine on the data which I have given you. If the symptoms are negative, then the hemorrhage is *inside* the peritoneum; if otherwise, then outside. I think now you will understand why one gets angry that men should constantly be saying that you are urging them to open an extra-uterine hæmatocele. I do nothing of the kind, except in one particular class of cases, viz., those in which the distention of the broad ligament is such that rupture has taken place into the peritoneum. Here the conditions are the same as in intra-peritoneal hemorrhage. I have never seen such a case, but if I had I would have treated it as if it were a primary rupture of the tube into the peritoneum.

Now, let me discuss the conditions of the second variety, the cases where rupture has taken place into the cavity of the broad ligament. These are most easily indicated and easily disposed of. In the act of rupture, the ovum is destroyed. The case then resolves itself into a simple broad ligament hæmatocele, which is to be left alone—which will be absorbed, though the convalescence will be prolonged. I advise you to leave these alone. Many of my brethren have bitterly regretted having tapped such hæmatoceles, because, if the pressure is lessened, you take away the hæmostatic effect of such pressure, the cyst will refill, and the woman will as surely die from loss of blood as if the hemorrhage had taken place into the peritoneum. The cases that go wrong are those that are injudiciously interfered with. If the blood is absorbed, there is an end of the trouble. Sometimes, perhaps in one among ten cases, the ovum is not killed, the hemorrhage being smaller. Then it goes on developing into a series of conditions which I will briefly run over.

It may go on into the fourth or fifth month, and the ovum die. This is a very common ending of the broad ligament pregnancy. When the ovum dies, it still should be absorbed, or it may suppurate, and then you get those extraordinary cases of abscess bursting into the bladder or rectum or at the umbilicus, with the discharge of fœtal bones at about the fourth or fifth month. These cases prove clearly enough where the fœtus has been; for, if you recall your anatomy, you will see that the places from which the discharge will take place are those of election in cases of abscess in the broad ligament from any cause. Its cavity is in immediate relation to the anterior wall of the rectum, and, therefore, the history of these cases is full of instances of discharge of the fœtal bones *per rectum;* less commonly into the bladder. Then, again, the fœtus may not die, but may go on to full time, distending the peritoneum—and it is extraordinary to what extent this can be carried on. Here is a diagram taken from a frozen specimen, in which the whole peritoneum is lifted off the anterior wall of the uterus and the posterior wall of the bladder, and then comes down about half-way between the umbilicus and

the pubes. After all, there is nothing wonderful about that when we reflect what takes place with the pregnant uterus. The whole of the fœtus, in such cases, is extra-uterine. There is nothing inside the peritoneum: proving that the view I took many years ago was the correct one, viz., that these full-time pregnancies were extra-peritoneal. This looks absurd; but Dr. Berry Hart's specimen proves it completely. One of his actual sections is before you, in order that you may have visible testimony of the accuracy of these views. Now, what must be done if it goes on to full time? The only course open to you is to operate and remove a living child. The older treatment was to give doses of morphia or use electricity to kill the child. But it must occur to all of you that even when they are killed they are not pleasant things to deal with. When suppuration takes place in the dead ovum, it may go on for years. Considering that we have now made five successful removals out of seven operations, I think that the moral question of procuring the death of the child is very serious. I do not pretend to be any better morally than my fellows, but I would not go out of my way to kill a child which had every right and every chance of living if we will only interfere. You must remember, too, that these ectopic children are probably the only children these women have. As to the prejudice of their being deformed, I can only say that I have three of them growing up around me, and they are healthy and well formed in every respect. I have never countenanced the employment of electricity in the treatment of these cases of extra-uterine pregnancy. I would let the electricians and others try their experiments, and when they come forward with better results than mine I will retire. I receive with as much respect as possible the statement as to the value of electricity in the treatment of these cases, but I am content to go on my own way, and await the judgment of my fellows. At any rate, it is perfectly certain that if you attempt to kill the fœtus before the rupture takes place, you may have good grounds for what you say; the idea is feasible enough. Given a case of tubal pregnancy before rupture of the tube: kill the fœtus, and you may save your patient the risk of a rupture. But there is a hitch, and it is this: I have now seen some thirty cases of tubal gestation, and I have had a chance of examining but one before the rupture had taken place. The first we know of these cases is, the patient lying on her back, with her legs drawn up, collapsed, and suffering agony. Of course, if the electricians can spot these women as they are walking along the street, well and good; but if they have to rely on the ordinary methods of diagnosis, then their treatment will not have much of a show. Again, if the bleeding is into the peritoneum, of course no needle, electrical or otherwise, will stop that. And if the bleeding is into the broad ligament, there is, as I have shown, no need for it. After the seventh month the killing of the fœtus does not relieve your patient from the risks of an operation; *toute au contraire*, the risks of suppuration, which is sure to follow, are enormous. If, on the other hand, you wait until full time, you can remove a living child.

Now, then, we come to the most important part. When your patient is dying from the effects of a ruptured tubal pregnancy, what are you to do? The course to pursue was indicated a hundred years ago, and with the utmost precision, and is now embodied in an aphorism of surgery, viz.: In case of hemorrhage, get at the bleeding point and apply a ligature. The same rule applies here. We know now that the source of the hemorrhage is in one of the vessels of the broad ligament. You open the abdomen, and find it full of blood and clots. Do not at first trouble about the blood, but go straight for the broad ligament. Go to where a swelling is felt, and if it is not on one broad ligament it will be on the other. Then pull it up, put on a ligature, and your patient is saved. In order to sum up what I have to say, let me read the account of the last case in which I operated, only a few days ago.

"On the morning of August 7th, at 1 P.M., Dr. Nelson, of Birmingham, called upon me in reference to a married woman, aged twenty-six, whom he had seen that very morning. She complained of a sudden attack of violent pain in the lower part of the abdomen. She rapidly got worse, and when seen by him was already in a condition of collapse. She was acutely anæmic, and presented all the classic symptoms of abdominal hemorrhage. The one point in the history that gave a clew to the case was that she had gone six weeks over her time without menstruating. He made the diagnosis of ruptured tubal pregnancy, and I had but little hesitation in agreeing with him. The patient was brought to the hospital as speedily as possible, and was found to be absolutely pulseless. I opened the abdomen, and, as one of the spectators afterward said to me, the flow of blood was as if I had opened a hydrant. Disregarding the blood and clots for the time being, I went straight for the fundus of the uterus, and in a moment discovered that a tubal pregnancy existed, and had ruptured in the right Fallopian tube. I promptly ligatured it, and then proceeded to remove the blood and clots. I then closed the abdomen, leaving in a drainage-tube. Not another drop of blood was lost, and the further progress of the case is as follows: At 5 P.M. on the same day her temperature was 36° C. (96.8° F.), and no pulse could be felt except deep down in the neck. The pupils were widely dilated, and the only sign of life was some slight movement of the diaphragm. The complexion was waxy and yellow. At 11 P.M., the temperature had risen to 38° C. (100° F.), but still no pulse was perceptible at the wrist; it was only thirty-six hours after the operation that it was possible to count the pulse. In Dr. Thomas's case the pregnancy ruptured outside the peritoneum; in this case it was inside. The trouble in both cases was the same, but in one case the hemorrhage was limited by the hæmostatic influence of the broad ligament, while in my case there were none of nature's efforts to arrest the hemorrhage, and in another hour it must have been fatal. The case was seen and the operation performed in the presence of Dr. Nelson, my assistant Dr. Derchelmann, Dr. Ostrom, of New York; Dr. Arthur Johnstone, of Danville, Ky.; and Dr. O'Callagnan, of the city of Cartow. It constitutes my forty-seventh case of the kind I have operated upon. Dr. Derchelmann made a careful examination of the preparation, and the rent in the tube is not more than a quarter of an inch long, the fœtus not being more than the fourth week. It lies in the membranes in the tube."

Why, then, should we let these women die? Surely, it is some advance if we can remove from the list of catastrophes of our art at least one such, and this we claim to have done.

ORIGINAL ARTICLES.

REST AND EXERCISE IN HEART DISEASE.[1]

BY ALFRED L. LOOMIS, M.D., LL.D.

RECENTLY physical exercise in the treatment of diseases of the heart has been much discussed, and the statement has been made by distinguished observers that it is a most valuable therapeutic agent in their successful management. Such a statement, however, is misleading and dangerous, unless accompanied by a definite description and classification of those pathological changes in the heart which allow of exercise, and those in which rest is essential to the prolongation of life. I venture to offer a few clinical experiences on this important subject, and to formulate, as far as possible, the rules which now govern me in advising rest or exercise to those suffering with heart affections. Clinical experience makes it evident that while one case of heart disease is benefited by rest, another is benefited by exercise, and the question is constantly coming to us in our management of cardiac cases, What pathological changes in the heart render exercise dangerous and what demand rest?

If we turn to the older writers on heart disease for an answer to this question, it will be found that the plan advised in the treatment of all valvular lesions was to diminish as much as possible the work of the heart, and in most instances absolute rest was insisted upon.

Until quite recently valvular murmurs were the important clinical phenomena in cardiac disease, and decided its diagnosis, prognosis, and treatment. But as our knowledge of cardiac pathology has advanced, murmurs have assumed a secondary place. Within the last few years we have gone a step further, and to-day no intelligent observer regards a cardiac murmur as anything more than a sound indicating the seat and character of a valvular lesion. The great problem to be solved in every case is, What is the condition of the heart-muscle and the heart-cavities? We know that so long as full nutrition is maintained in the cardiac walls the heart meets every obstacle to its activity with added force, and only when the walls are weakened do we find the clinical evidences of cardiac insufficiency. To maintain the integrity of the heart-walls and cavities the muscular tissue of the heart must be healthy. The heart-muscle must receive a sufficient supply of healthy arterial blood. The products of muscular waste must be rapidly removed from the body, and the trophic nerve apparatus of the heart must be in a normal state.

Any essential deviation from these normal conditions leads to weakening of the heart-walls, and favors dilatation of its cavities. It is evident that when the physical organism, as well as the heart itself, is healthy, abnormal increased stimulation of the cardiac muscle from any cause results in the production of hypertrophy, while, on the other hand, if the vitality of the organism is below par, and the heart-muscle imperfectly nourished or diseased, it does not respond to the increased stimulation, and instead of becoming hypertrophied, the walls of the heart yield to the intra-ventricular blood pressure, and dilatation of the cardiac cavities is the result. Whenever there is dilatation of the heart-cavities, with weakened heart-walls from any cause, physical exercise is contra-indicated whether valvular lesions exist or not.

It seems hardly necessary to insist upon the importance of absolute rest in the treatment of all acute inflammations of the heart and its appendages, for no one, I think, will claim for a moment that it is safe for a patient with an acute pericarditis, endocarditis, or myocarditis to take even moderate exercise. It is a well-recognized therapeutic principle that for the successful management of any one of these acute affections, patients must be kept at rest in bed, freed from all those influences which tend to accelerate the heart's action or increase its force; in fact, the remedial agents on which we rely most in such cases are those which tend to quiet the heart's action and lessen the force and rapidity of the circulation.

The question, therefore, which naturally meets us first in this discussion is, In which chronic valvular lesion (while the heart is still competent, there being as yet no signs of heart insufficiency) shall we advise or permit physical exercise, and in which shall we enjoin rest?

I maintain that no chronic valvular lesion is to be regarded as absolutely contraindicating physical exercise, unless it is associated either with hypertrophy or dilatation of the heart-cavity which it obstructs. The fact that an obstructive or regurgitant murmur is heard at the mitral or aortic orifice is not conclusive evidence that an individual may not without risk engage in the most violent physical exercise; but when a valvular insufficiency at either of these orifices is associated with extensive hypertrophy and dilatation of the left auricle or ventricle, then the question of exercise or rest is to be determined, not so much by the heart condition, as by the age, habits, and general nutrition of the individual. A stenosis or valvular insufficiency after fifty years of age is a very different affair from the same condition at twenty or thirty. Chronic alcoholism and the evidences of general fibrosis render a heart crippled by valvular lesions far less able to resist the strain of physical exercise, than if the same valvular insufficiency exist in one who is free from these general degenerative changes. The

[1] Read before the American Climatological Association, June, 1889.

two following histories will serve to emphasize these statements:

Case I.—A gentleman, forty-three years of age, with no rheumatic or gouty tendencies, consulted me in June, 1887, for an opinion if it would be safe for him to join a hunting and fishing excursion to the northern part of Minnesota during the summer. He had been told that he had heart disease, the result of a single attack of acute rheumatism when he was eighteen years of age.

On examining him I found the evidences of extensive mitral insufficiency, with well-marked hypertrophy and dilatation of the left ventricle; his cardiac rhythm was perfect, and he gave no cardiac symptoms. He had led a moderately active life, his habits having been most abstemious, using neither alcohol nor tobacco. I tested him in every possible way, but could not detect the slightest indication of heart insufficiency, and gave him the opinion that it would be perfectly safe for him to take the proposed trip, requesting him to call upon me on his return. During the following November he visited me again, much improved in general physique, and, as he said, stronger than he had been for years. He stated that for three months he had camped out, taking a great amount of physical exercise in rowing and tramping. I could find no change in his heart, except that the apex beat was more forcible than at any previous examination.

Case II.—In May, 1888, a gentleman, forty-six years of age, of very intemperate habits, who had had a severe attack of acute rheumatism at twenty, consulted me for dyspeptic symptoms and pain in the epigastrium. I found on examination the evidences of mitral regurgitation, with well-developed hypertrophy and dilatation of the left ventricle and auricle; he gave no cardiac symptoms, and was not aware that he had a cardiac lesion. I advised him to stop the use of alcohol and tobacco, and to live an out-of-door life in the country during the coming summer.

The following December I saw him again with his attending physician, and found him in a condition of general dropsy, with all the signs of advanced cardiac insufficiency. He reported that when he went into the country the preceding June, he stopped the use of alcohol and tobacco, and immediately began a very active out-of-door life, rowing some days five or six miles without resting; for a time he seemed to improve, but early in September, after rowing a race of two miles, he became short of breath, and had a violent paroxysm of dyspnœa which lasted several hours. After this attack, he found that a short row would bring on a paroxysm of dyspnœa; soon his feet began to swell, and he steadily grew worse, until now he was compelled to assume a sitting posture night and day, and was constantly in a condition of great distress.

The important difference to be noticed in these two cases is in their habits of life. At the time of my first examination, physical signs gave little or no appreciable difference in their cardiac lesions. Both had well-marked mitral regurgitation, with the usual accompanying hypertrophy and dilatation of the left ventricle and auricle; but the abstemious habits of the first gave assurance that the cardiac muscle still retained its normal integrity, while the alcoholic history of the second left little doubt that the cardiac muscle was not in a condition to respond to prolonged or severe intra-ventricular tension, and that under such tension sudden and extensive dilatation of the ventricles occurred, which was never recovered from.

I erred in not appreciating this condition more fully at my first examination, and not guarding my patient against the violent and prolonged physical strain which initiated his heart insufficiency.

The object to be aimed at in the treatment of every case of mitral stenosis is to favor the process of self-adjustment in the heart, by the avoidance of excessive intra-auricular blood-pressure. While gentle and healthful exercise may be of service in relieving hepatic and portal congestion, sudden or prolonged physical exertion sufficient to cause muscular and circulatory exhaustion tends to increase intra-auricular tension, and may lead to extreme dilatation of the auricle and permanent crippling of the cardiac circulation.

The following experience impressed upon me the importance of being very careful about excessive physical exertion in these cases:

Case III.—A few years since a girl, eighteen years of age, was brought to my office by her brother to obtain a permit of admission to the hospital. As she entered my office I noticed that she was very much out of breath. On examination I found the evidences of advanced mitral stenosis. I gave the brother a permit to the hospital on condition that he would take the patient there in a carriage, as there was a strong wind blowing from the east, and she would be compelled to walk a mile against the wind. He promised, but after leaving my office forced his sister to walk. She fell by his side as they entered the hospital gate, and died in a few moments. The autopsy showed an enormously distended left auricle, intense pulmonary hyperæmia with œdema, and a mitral stenosis that would not admit the end of the little finger.

The treatment of mitral insufficiency is directed mainly to the prevention of weakening of the ventricular walls and consecutive dilatation of the ventricular cavities. Muscular exertion, especially such as increases intra-ventricular tension and causes temporary interference with respiration, favors the development of both these dangers. A safe rule is to avoid everything which throws extra strain upon the heart, especially if the evidences of commencing dilatation exist. The amount of exercise which may safely be taken is determined by the special circumstances of each case; in most instances there

is little difficulty in deciding this point, for any exertion on the part of the heart which makes itself immediately felt by shortness of breath, with slight irregularity in the force of the radial pulse, cannot be safely indulged in. Whenever, from any cause, there is with a mitral insufficiency a defective, irregular, or in any respect an uncomfortable action of the heart, rest must be insisted upon until the heart regains its rhythmical power; as soon as its rhythmical power is regained, gentle exercise is useful in improving not only the general condition of the patient, but also the contractile power of the heart itself, for muscular movements act as a gentle stimulant to many of the secretions, and thus improve cardiac nutrition. We must, therefore, recognize in mitral insufficiency with an imperfectly compensating heart, that there is a period for rest and a period for exercise; a period when exercise acts favorably by inproving general nutrition, relieving the system of excrementitious products, and furnishing a more abundant supply of oxygen, as well as a period in which it acts unfavorably by calling upon an already overworked heart for still greater power, bringing it nearer the point where forced expenditure overbalances nutritive repair.

The treatment of aortic stenosis and regurgitation has for its object the postponement of tissue degeneration of the heart and arteries by maintaining all the tissues, especially the cardiac muscle, in the highest state of health. Before the period of ventricular incompetency is reached more exercise can safely be indulged in than in mitral disease; in fact, patients with aortic valvular disease should lead active out-of-door lives, and any exercise may be indulged in which does not involve strain or overtaxing the heart; but if the valvular lesions are associated with atheroma of the vessels the individual should lead a quiet life. The indications for rest or exercise in this class of cases are determined by the character of the murmur, the integrity of the heart-muscle, the extent of the ventricular dilatation, and the condition of the arterial walls. A long murmur indicates far less aortic incompetency than a short gushing one, and, as a rule, will admit of much greater physical strain without damage to the heart. Commencing failure of the heart-muscle and non-compensating dilatation of the ventricular cavity, will not, as in mitral disease, be indicated by shortness of breath, but by headache, vertigo, or actual fainting, throbbing of the peripheral vessels, cardiac palpitations, and carotid pulsations. The condition of the arterial walls will be determined by the age, habits, and hereditary tendencies of the patient, and by the appreciable changes in the surface vessels. In any case, therefore, of aortic valvular disease, if the murmur is short and gushing, the cardiac rhythm easily disturbed, the left ventricular area much increased, the cardiac impulse diffused, and the age of the patient, his habits, and his hereditary tendencies, such as to render it probable that extensive arterial degeneration exists, active physical exercise becomes dangerous, and the effects of even moderate exercise must be closely watched.

The important things to be accomplished in the treatment of either primary or secondary cardiac hypertrophy are to diminish, as much as possible, heart strain, to avoid accelerating the circulation of the heart-muscle, so as to enable the heart to compensate perfectly for the defects it has to overcome without exhausting its contractile power. We cannot, and we would not if we could, prevent the compensating hypertrophy which follows obstructions to the normal blood current, which may have their seat either in the heart or bloodvessels; but we may, by forbidding excessive muscular exertion, or other provocatives of increased cardiac action, prevent such hypertrophy from becoming excessive and consequently injurious.

A mode of life must be adopted which will prevent continuous or repeated excitement of the heart, and which, at the same time, will tend to promote the renovation of tissue and maintain the general state of nutrition as well as the vitality of the cardiac muscle, so as to enable it to meet the extra demand which is required of it in compensating for the lesion which has led to its development, and thus delay as long as possible the degenerative changes in muscular fibre which are certain to occur in excessively hypertrophied heart-walls. To this end moderately active exercise may be taken in the open air, but within the limits of slightly quickening the circulation, great care being exercised that occasional or sudden strain shall not be put on the heart by injudicious exercise or violent muscular effort; active prolonged physical exertion with the idea that it will reduce the volume of an enlarged heart, is calculated to exhaust muscular power, and leads to degeneration of muscular fibre. If a feeling of cardiac oppression, difficult breathing, headache, and vertigo exist, even moderate exercise will be found harmful.

The indications for treatment in cardiac dilatation from any cause are to diminish intraventricular and arterial blood pressure, and relieve venous engorgement: the heart, as far as possible, must be placed at rest, for it is well established that physical exertion increases both cardiac and arterial tension. There is no condition in which cardiac dilatation occurs that active physical exercise is safe, except when the dilatation is secondary to valvular lesions, the integrity of the muscular tissue of the hypertrophied walls being fully maintained, so that the heart fully compensates for both the valvular lesions and the dilatation. The question of exercise or rest in any form of degeneration of the heart-walls is to be determined by the extent and nature of the degen-

eration, as well as by the constitutional conditions under which it occurs. My experience leads me to the opinion that extensive fibroid change in the cardiac walls, occurring, as it usually does, in those of an hereditary or acquired fibroid diathesis, admits of less intracardiac tension than extensive fatty degeneration of the muscular fibre. Sudden death may occur in such cases as the direct result of sudden and violent exertion. In some instances an extreme dilatation of the ventricular cavities takes place at the time of the physical strain, which is never recovered from, and marks the beginning of a heart insufficiency which terminates life after a few weeks or months of cardiac distress.

The following history emphasizes this statement:

Case IV.—In November, 1888, a gentleman, fifty six years of age, with a gouty history, consulted me for slight attacks of dyspnœa, which followed exertion, stating that within a few weeks he had become so short of breath going up the stairs to the elevated railroad, that he was compelled to rest once or twice during the ascent. I found on examination the normal area of precordial dulness much increased, the apex impulse diffused and feeble, the cardiac rhythm irregular in force, and the heart sounds indistinct, but no murmur could be detected. From his history and general condition taken in connection with his heart symptoms, I was quite certain that extensive fibroid changes in the heart-walls existed, and I cautioned him against making violent or prolonged physical exertion.

On the 15th of the following month the elevator in the building where he had his offices having temporarily stopped for repairs, he attempted to walk up four long flights of stairs; when about halfway up the last flight his breathing became so difficult that he sank on the stairs and called for help. He was carried into his office, and after resting a few hours, took a carriage for his house in Fifty-first Street. A few moments after he reached it he died.

The autopsy showed an extremely dilated heart distended with blood, with somewhat thickened ventricular walls, which everywhere showed extensive fibroid changes. At the apex of the left ventricle the muscular tissue had entirely disappeared, and its place was occupied by firmly organized fibrous tissue; there were also evidences of both visceral and parietal interstitial pericarditis. It was evident that the fibroid changes in the heart walls were so extensive in this case that they had not sufficient contractile power to overcome severe intracardiac tension.

In the early stage of fatty degeneration of the heart walls, a moderate degree of vigor may be maintained for a long time, if patients are restricted to an animal diet, and adopt a life of daily systematic out of-door exercise, provided the exercise is never carried to fatigue or to such a degree as to cause dyspnœa. Often such patients after a time will be able to undergo an amount of physical exertion with advantage, which they could not at first safely have attempted, on account of the dyspnœa and anginal pain which it produced. Muscular exercise under these circumstances is far more likely to be of service in the young than in those past middle life. I have frequently found that in young subjects the signs of heart insufficiency would entirely disappear during a carefully regulated course of gymnastic or pedestrian exercise. But in those advanced in life, atheromatous disease of the aorta and secondary affections of the lungs and liver render even slight physical strain dangerous. If a fatty heart has once become dilated, as is indicated by recurring attacks of anginal pain, syncopal seizures, and paroxysmal dyspnœa, general enfeeblement takes place rapidly, and the most gentle exercise becomes dangerous.

The only heart affections which I have found uniformly benefited by vigorous physical exercise, are fatty infiltration, or, as it is sometimes called, fatty overgrowth of the heart, and weak hearts in anæmic and neurotic subjects.

The treatment of fatty infiltration of the heart differs in no respect from the treatment of general obesity; if the fat can be removed from the muscle of the heart, the organ will regain its normal contractile and resisting power. If the subject is young, the pulse regular, the heart free from valvular lesions, and its cavities not dilated, the aorta healthy, and the kidneys free from disease, the most active exercise may be undertaken without danger and usually with benefit. It is claimed that Oertel's plan of treatment is applicable to all cases of heart disease where there is a disturbance of the hydrostatic balance, but usually there is no disturbance of the hydrostatic balance in heart disease until after failure of compensation, except in those cases where there is general obesity with fatty infiltration of the heart.

The principal and primary pathological factor in obesity is faulty oxidation, and as the heart becomes implicated the power of oxidation is still further lessened. The object of treatment in these cases is therefore to get rid of the fat by increasing oxidation, and thus improving the nutrition of the heart muscle.

There is no question that the most effective means of accomplishing this is by active physical exercise in the open air, such as is obtained by mountain-climbing.

This is no new proposition, for Dr. Stokes, in his work on *Diseases of the Heart* (page 373), states that pedestrian exercise in mountainous countries such as Switzerland and the Highlands of Scotland, will enable patients with fatty hearts to undergo active and prolonged exercise without signs of heart failure, and that the effect of pedestrian exercise is

twofold: it not only increases muscular energy and development, but by augmenting the secretions of the skin it assists in conveying off a large quantity of the oily constituents of the system; "and," he adds, "I have seen most remarkable examples of this in young persons who have spent summers walking through the Alps, when during exercise they were under constant perspiration."

No one, I think, will doubt that a life of activity, which favors the oxidation of waste products and accelerates their removal from the body, tends to lessen the work of the heart; but if the heart-muscle is not in a condition to respond to the exercise, dilatation of the right heart must occur, and as its muscle becomes more and more exhausted, systemic capillary obstruction and increased arterial tension follow. When under such circumstances the imperfectly nourished left ventricle is unable longer to meet the demand that is now made upon it, it becomes dilated. Therefore even in a heart that is the seat of fatty infiltration, exercise must be carefully graduated, so that it shall at no time exceed the nutritive supply to the heart muscle. In every case where the heart muscle is not in a condition to respond fully to graduated exercise, the heart work must be reduced to its minimum, until by rest, forced nutrition and alimentation, its contractile power shall be regained. Certainly no case of fatty infiltration should be subjected to Oertel's plan of treatment unless there is unmistakable evidence that the cardiac muscular fibre is healthy. The weak hearts which are so often met in anæmic and neurotic subjects, I have usually found benefited and in many instances cured by judicious exercise and a carefully regulated diet, but the danger of cardiac exhaustion in these cases is very great and must constantly be borne in mind. My studies of the effects of violent physical exercise on the heart convince me that the morbid changes which lead to irreparable cardiac incompetency in a large number of cases commence in the left ventricle, and that their order of development is as follows: It is well established that during violent and prolonged physical exercise the cavity of the left ventricle becomes dilated and its walls hypertrophied to meet the greater demands of the general system for an increased blood-supply; this increase in the ventricular capacity and power gives rise to high arterial tension and increased aortic recoil; as a result degenerative changes are initiated in the walls of the aorta which diminish their elasticity and contractile power; as a consequence the force of the coronary circulation is diminished, and the nutrition of the heart walls interfered with. Excessive dilatation of the left ventricle is now liable to occur during any severe intra-cardiac tension, and the resulting overloading of the pulmonary circulation leads to right ventricular dilatation and finally to insufficiency at the tricuspid orifice. The general venous systemic engorgement which follows marks the advanced stage of cardiac incompetency. Therefore if we advise one who has passed middle life or who has an acquired or hereditary fibrous diathesis to enter upon mountain-climbing, or any other prolonged physical labor, we find when too late that our advice has been followed by irreparable dilatation of the right ventricle.

I would urge that before advising exercise to patients with cardiac affections, or even to those who have entered upon the degenerative period of life, who furnish none of the usual signs of cardiac disease, we carefully investigate their cardiac resisting power as well as the condition of their general arterial system.

TWO CASES OF LITTRE HERNIA.

By CHARLES B. PENROSE, M.D., Ph.D.,
OUT-PATIENT SURGEON TO THE PENNSYLVANIA HOSPITAL.

Littre hernia, or a hernia involving only a part of the circumference of the intestine, is of unusual occurrence and of great interest from a surgical point of view. In such cases, intestinal obstruction may exist though the constricting ring does not completely occlude the lumen of the gut. The cause of this obstruction is due either to a kink or sharp flexion, or to paralysis of peristaltic motion induced by the strangulation.

The diagnosis is obscure, for no tumor may be present, and no local tenderness or localized pain; all the pain being referred to the umbilicus, as in many other forms of intestinal obstruction.

In such cases of concealed hernia, where all symptoms of intestinal obstruction are present without any indication that the trouble is due to strangulation through a hernial opening, operation should be performed by median abdominal incision as in intestinal obstruction from an intra-abdominal cause. In Littre hernia median abdominal section not only serves for exploration, but often may be sufficient for treatment, as reduction can be accomplished by traction on the intestine from within the abdomen without division of the hernial ring.

Case I.—A female, forty-eight years old; general appearance cachectic, and that of a woman of seventy; admitted to the medical wards of the Pennsylvania Hospital under the charge of Dr. A. V. Meigs. She had suffered with abdominal pain for one week and with persistent emesis for thirty-six hours before admission. The attack was not acute in character, and she had on previous occasions suffered with similar symptoms. Emesis became feculent on September 16th; abdominal pain continued, and constipation was absolute. Dr. Meigs decided upon operation, and she was examined by the writer on September 17. She was then in a sinking condition; there was a moderate amount of abdominal distention, and the move-

ments of the coils of intestine were plainly visible through the abdominal parietes. There was general tenderness over the abdomen—most marked in the right iliac region. She had a previous history of right inguinal hernia, but there was no tumor present, and no tenderness in the region of the inguinal canal. Laparotomy was performed by median abdominal incision. A small quantity of sanguinolent serum was found in the peritoneum, and the presenting loops of ilium were distended and congested. The most distended loop was traced to the right iliac region, where there was a mass of adherent intestine; one loop about eight inches in length was bound by adhesions in a position of sharp flexion. The adhesions were separated with the fingers and the right internal inguinal ring was examined. A loop of intestine was found firmly attached to the ring by a diverticulum which entered the inguinal canal and was bound there by such old, organized adhesions that its removal by means of the abdominal incision was impossible. There was, however, no strangulation of the diverticulum and no occlusion of the intestine from which it sprang. No other pathological condition was found in the abdomen, the obstruction being caused by the adherent loops of intestine in the right iliac region. There was no shock after operation and she passed a comfortable night. Six days later she had obstinate diarrhœa.

She died from exhaustion, due to a combination of intercurrent diseases, thirty days after the relief of the obstruction.

At the autopsy a conical diverticulum was found situated on the ilium at a distance, from the mesenteric attachment of one-fourth the circumference of the intestine, and eighteen inches from the ileocæcal valve. It was one inch long and one-half inch in diameter at the base. In structure it was composed of all the intestinal coats. It was so firmly adherent to the inguinal canal that it could not be torn out. It occasioned no obstruction.

There were also present general atheroma, disease of liver, lungs, kidneys, and vertebræ, and cancerous ulceration of the cæcum.

CASE II.—A woman, sixty-four years old, was seized with sudden pain in the right inguinal region after heavy lifting, on July 26, 1889. This was followedby prostration, repeated vomiting, and intense umbilical pain. She was admitted to the surgical wards of the Pennsylvania Hospital twenty-four hours after the beginning of the attack. Her condition was then good. The temperature was normal, the pulse 90. There was no abdominal tenderness and but slight distention. The vomiting had ceased, and the tongue was clean. There was a cystic tumor, the size of a pigeon egg, over the right external inguinal ring, which had been there for many years. There was no tenderness on pressure, and no pain in the region of the inguinal canal. All her present pain was referred to the umbilicus. Before admission to the hospital unsuccessful attempts at taxis had been made on the cystic swelling in the right groin. When admitted, the tumor, except from its position, presented none of the signs of hernia. It was painless on pressure, and freely movable under the skin, and of the same size which it had had for many years.

A large rectal injection of turpentine and water was administered, and was followed by a very small fecal movement.

Early the next morning the abdominal pain and distention increased, and the vomiting began again and became fecal. As there was undoubted obstruction and no symptom to indicate the position of the lesion, a median abdominal section was made at 9 A.M. for the purpose of exploration. A loop of ilium was found caught in the right internal inguinal ring. The whole lumen of the gut was not involved, but a portion on the convex surface, about one inch in circumference, had slipped through the ring and was firmly constricted, requiring considerable traction for its removal. It was not necessary to divide the ring. The strangulated portion was brought to the abdominal opening and examined. It presented the appearance of a livid circle of one inch diameter on the convex surface of the ilium. It was restored to the abdomen and the incision closed. The cystic tumor in the groin was unaltered by the operation. Recovery was uninterrupted.

It is probable that the hernia in the case first described began in the same way as in Case II., without, however, producing strangulation and acute obstruction, and the false diverticulum was caused by constant, long-continued traction on the adherent portion of the circumference of the intestine.

DIPHTHERIA AT HIGH ALTITUDES.

BY S. S. TURNER, M.D.,
A. A. SURGEON U. S. ARMY.

ASIDE from its professional interest, it is seldom that one finds anything so entertaining in a medical journal as Dr. S. H. Chapman's "Notes on the Prevalence of Diphtheria at High Altitudes," published in THE NEWS of September 28th. The Austrian surgeon's brief summary of the epidemic in Tyrol, as of "atmospheric" origin, "non-contagious, and uninfluenced by treatment of any sort," is somewhat startling; but his statistics—"sixty cases and forty deaths"—correspond so nearly with my own observation of the disease in the high and dry northwest, that a great load is thereby lifted from my mind.

Approximately we may say that Dakota extends from the 43d to the 49th degree north and from the 97th to the 103d west, and that its elevation varies from 1000 to 3000 feet above the sea. Within this territory many cases of diphtheria, treated by many physicians, have come to my knowledge, and to place the mortality at 60 per cent. is to do no injustice to any practitioner of my acquaintance, whether we admit or not that the disease is "uninfluenced by treatment of any sort."

In the southwestern part of the Territory, ten or

twelve years ago, I saw two fatal cases, in consultation with other practitioners. Within a radius of twelve miles I also attended five cases personally, of which three died—seven cases, five deaths. I mention only the cases seen personally, but they do not differ from the general results.

I next encountered the disease about six years ago at Fort Buford, which is nearly upon the 48th degree north, with an elevation of 2000 feet or more. Like all "well-regulated" military posts, its slops are removed daily, its grounds "policed" weekly, the whole being inspected monthly by the commanding officer and his staff, and as much oftener by the chief medical officer as he may deem advisable. Whether due to this fact or not, there is very little disease of a serious character at this or any other of the posts in Dakota or Montana. Once in a while, however, we encounter a typical case of typhoid, such as in England comes only from dunghills and dairies, or in Philadelphia from defective plumbing, or more often a typical pneumonia, neither of which diseases gives rise, in my experience, to other cases, though treated in the same wards with tonsillitis, lumbago, and gonorrhœa.

At the time I speak of, Fort Buford was 160 miles from any considerable village and 80 miles from the nearest railroad station. It was midwinter, with a foot or two of snow, and a temperature ranging from about zero to 40° below. In some winters the temperature is rarely above zero between December 1st and March 1st, and never above freezing point, while in other years there may be an occasional thaw within this period.

A few hundred yards north of the main garrison, on the open prairie, is a structure containing four sets of "laundress quarters," each consisting of two rooms and an enclosed shed, the latter being used for water barrels in the winter and for laundry work, while the kitchen, and often the sleeping-room, is used for drying purposes. Yet these families are healthy as a rule. Beginning at the east end of the row facing south, one of two children in the family was attacked with what appeared to be a catarrhal tonsillitis, but on the second or third day I discovered that I had to deal with diphtheria, and that the second child was coming down.

In the adjoining quarters were five children who had been playing in the infected quarters, apparently with as much freedom as at home; and, in fact, the partitions were of such an open and flimsy character that ordinary conversation could be heard from one room to the other. However, I quarantined the five children upon their own side of the partition, and made a thorough inspection of the entire premises. Inside and out everything was clean. Suds had been carried away and poured upon the snow. The floor of the shed was damp, but clean. To all appearances the quarters were as good as any in the garrison, and all were as they had been for ten years. I had not heard of the disease being at any time nearer to Fort Buford than Bismarck—250 miles east. On the opposite side of the garrison were a larger number of laundress quarters, to all appearances in a similar condition, but no disease appeared there, although the women, as is usual, showed their sympathy by frequent visits.

In a few days both children were dead. About a week after their burial I was called to see the oldest of the five in the other family. It was said that he had been ailing for some days—had appeared weak and pale, but had continued to play about the house.. That morning, however, he had fallen down from sheer weakness while going to his breakfast. I examined his throat and found both tonsils diphtheritic, but apparently in a state of beginning resolution. I prescribed iron and chlorate of potash, without local treatment, and directed that the boy be kept in for a few days longer. He continued to improve, and recovered without confinement to bed, but later nearly starved from paralysis of the muscles of deglutition. The four younger children escaped the disease, as well as all of those in sets three and four.

Two months later a band recruit arrived with wife and three children from West St. Paul, where virulent diphtheria was prevailing. They occupied an isolated cabin, distant from the scene of the late outbreak nearly half a mile. A few days after their arrival one of the children was prostrated by the disease and died. The rest of the family escaped. Two months later a lad arrived from the far south to visit an aunt near the cabin of the band man. A few days after arrival the boy was stricken in the morning and died before sundown. Five cases; four deaths. I do not think the last two cases bore any relation to each other, or to the former three.

Some five years later—last winter—Fort Buford was revisited by the scourge, but, happily, I was not there to see it. Nearly the entire garrison had been changed in the meantime. The disease did not appear amongst the laundresses' children, but in the family of a non-commissioned staff officer, who lost his wife and three out of four children. One of two children in the nearest neighboring family was attacked and died. In a distant part of the garrison two of three children in the family of an officer were attacked and died. Two children of another officer were attacked, but recovered, the youngest suffering alarmingly from paralysis of the throat. Eight cases with six deaths. Total, twenty cases, with fifteen deaths, or a mortality of 75 per cent.

These cases "militate" strongly against the "atmospheric" theory of the Austro-Tyrolean, and, further, they prove that in a northern atmosphere

of great rarity and purity, with only moderate elevation, diphtheria is the most fatal of prevailing maladies.

While all the cases observed by me appeared to be of strictly local origin, I do not wish to account for the appearance of the microbes in any case, or for their sudden disappearance in the presence of so many exposed children; for future students may wish to prove that all microbes are pathological *results*, which may reproduce disease when transferred to a healthy body.

Camp Sheridan, Wyoming Territory, Oct. 16, 1889.

HOSPITAL NOTES.

STRANGULATED INGUINAL HERNIA.

Abstract of a Clinical Lecture
Delivered at the Buffalo General Hospital, October 10, 1889.

By ROSWELL PARK, M.D.

Dr. Park showed a man aged forty years suffering from an inguinal hernia which three and a half hours previously had become strangulated. Taxis having failed, he was brought to the hospital for operation. The hernial tumor was the size of a child's head, irregular in shape and distending the scrotum. It had also dissected between the superficial tissues of the lower part of the abdomen, which was considerably swollen in consequence. Previously to operating the surface was scrubbed, shaved, and washed with a mixture of turpentine and alcohol, which on account of its penetration Dr. Park prefers to other antiseptics for the skin. On opening the sac in the usual manner, about four ounces of blood-stained serum escaped. The walls of the sac were much thickened, and in some places adherent to the intestines, of which about twenty inches were found in the cavity. Several of the adhesions were torn, but no oozing followed and sutures were not necessary. The internal ring was nicked and the bowel readily replaced. A portion of the sac was continuous with the meso-cæcum, but the remainder was removed. A counter-opening was made for drainage, the wound irrigated and the internal ring united with silver wire sutures, catgut sutures being used superficially, and the whole dressed with an antiseptic pad.

Note.—Four days later the patient died, and at the autopsy an area of meningitis over the leg centre was found, under which the brain was œdematous.

CLINICAL MEMORANDA.

THERAPEUTICAL.

Clinical Reports on Arsenite of Copper.—There lie before me nearly fifty letters from physicians residing in different sections of the country, who have lately been observing the action of arsenite of copper in the treatment of various bowel affections, including cholera morbus, cholera infantum, diarrhœa, and dysentery. To sift this mass of correspondence and correctly estimate the value of the remedy is a work of no small magnitude, and the space required for such an elaborate study would tax the ournal that should undertake to publish it so severely, that I have decided to give an abstract of the communications, together with some illustrative cases, in the hope that further investigation will result as satisfactorily as has that which I have undertaken.

As a preliminary to the reports which follow, I may add a few words concerning the indications for the use of this comparatively new remedy, and some instructions regarding its administration. In addition to the above-mentioned diseases, Dr. Broughton, of Reidsville, N. C., has found it of great value in the treatment of chlorosis and allied affections, the dose in such cases being 1-25 grain three times daily. The best method of administering the drug is in small and frequently repeated doses. Thus, in the treatment of a case of cholera morbus, the dose for the day (1-100 grain) is dissolved in from four to six ounces of water, and a teaspoonful of this given every ten minutes for the first hour, and afterward at intervals of one hour, or, should the circumstances warrant, every half hour. To meet those cases where the use of water is contraindicated, I have had prepared for use tablets containing grain 1-100 and grain 1-5000, which enable the physician to graduate the dose, and repeat it at as frequent intervals as may be deemed necessary.

I had some hesitancy in offering to the medical profession a drug which was to be used in such small doses, and asked the manufacturers if it were possible to detect so small a quantity of the remedy as one part in five thousand, to which they replied that it was quite possible to detect *one part in ten thousand*, of either the arsenic or the copper. My later observations have been very favorable to the continued use of the drug, though I should add that there seems to be greater benefit derived from its administration in the early stages, before the inflammatory action has extended to adjacent or contiguous structures. When adjacent structures are involved, it is advisable to combine with it some suitable opiate in small doses, and as this method is the one that I have adopted, it will appear that I have not advocated the arsenite of copper as a specific.

In my attempt to present an abstract of the correspondence, some cases, of course, will have to be overlooked, but I wish to represent the true condition of affairs as nearly as possible, and I desire here to return my sincere thanks to the gentlemen who have favored me with an account of their experience.

Dr. J. W. Long, of Russell, Kansas, writes as follows: "At the time the samples were received, I had a very severe case of summer complaint under treatment, of three weeks' duration, in a child six months old. The usual remedies in such cases had been tried in vain; after I began with the arsenite of copper, there was within twenty-four hours a decided improvement, and after the third day the child was well." Dr. Long says that he has also used the drug in the diarrhœa of malarial and typhoid fever, and in other affections of the bowels, with good results.

Dr. W. H. Rees, of Trading Post, Kansas, writes as follows: "I have had occasion to use arsenite of copper in four bad cases. The first case was a child, æt. two and a half years, with a severe attack of cholera infantum. Vomiting was almost continuous, the bowels had moved fifteen to eighteen times in the course of seven hours, the nose and extremities were cold, with the usual pinched appearance of face, and shrunken limbs. I had been in attendance twenty-eight hours when the arsenite

of copper arrived, and had freely used the usual remedies, but the patient was worse than when first seen. I then began with the arsenite of copper and withdrew everything else, except small quantities of water. The child vomited but once after the first dose, and the bowels moved but three times in the following twelve hours. Improvement was steady and permanent, and I made but two subsequent visits. To-day the child is as rugged as you could wish to see."

Dr. R. D. Boggs, of Marquez, Texas, says: "In cholera morbus, the effects of arsenite of copper have been prompt, ameliorating the symptoms and perfecting a cure without other medication, in almost every case. In cases of longer duration, I have generally been unsuccessful with it, and have had to resort to other treatment, although I regard it as a valuable remedy in bowel troubles, if used early."

Dr. J. B. Burroughs, of Shortsville, N. Y., writes that he has been successful in the treatment of four cases out of five, and that the fifth case was much benefited by the treatment.

Dr. R. B. Root, of Georgetown, Mass., says he has used it in six cases, three of which were successful, but that in cholera infantum he dared not continue its use longer than twelve hours.

Dr. P. D. Carpenter, of Pittsford, N. Y., says although he used it in both infants and adults, his experience was not favorable, and that he was forced after a sufficient trial to resort to other remedies.

Dr. John L. Heffron, of Syracuse, N. Y., has also failed to see good results following its use, although he says it is worthy of a more extended trial than he gave it.

The experience of Dr. A. H. Thomas, of Ironwood, Mich., is in marked contrast with that which has just been related. Speaking of its use in cholera morbus, he says: "In every case I have used it, it acted like a specific. I gave a few tablets to Dr. Nivens, of this place, for trial. He was called to a very severe case, and would have used his hypodermatic had he not forgotten it. He prescribed the arsenite instead, with the happiest results."

Dr. H. S. Crockett, of Rural Retreat, Va., reports that he has used the remedy in a number of cases of cholera infantum and in cholera morbus, but that as other remedies were used at the same time, he is unable to say what influence the arsenite of copper had, "except in a case of dysentery, which yielded to this drug after the disease had resisted the ordinary remedies, and also one case of cholera morbus which was relieved without resort to any other remedy."

Dr. F. C. Ard, of Pomeroy, Ohio, has used this drug in two cases only, one being a child of fourteen months with diarrhœa, the other a child of eighteen months with acute dysentery, engrafted upon a chronic diarrhœa. The first case was promptly relieved, but in the second recourse was necessary to other methods of treatment.

Dr. J. W. Chamberlain, of Wyalusing, Pa., has used the drug in various instances, and thinks the results have for the most part been favorable. Some of his patients have not again reported, and these cases are set down as successful, while in others he has seen relief follow within twenty-four hours.

Dr. J. H. Freeman, of Lexington, Va., reports that the results were very satisfactory. "Three cases of enterocolitis were promptly relieved of the diarrhœa and tenesmus, and, as no other medicine was given during the time, I am satisfied that the results were due to the arsenite of copper. Other treatment which had been adopted was discontinued and the arsenite alone used, when the patients recovered in a few days." He says also: "The arsenite was tried in a case of tubercular laryngitis with diarrhœa, with very great relief. I also gave it in a case of pulmonary phthisis, with profuse diarrhœa, and the discharges were reduced from twelve to two per diem."

Dr. A. D. McDonald, of Wilmington, N. C., reports having used the remedy in eight cases of typhoid fever, and that it acted like a charm in six and did moderately well in the other two. He has used it in about forty cases, and is well pleased with it.

Dr. E. L. Harriott, of Jacksonville, Ills., gives an account in detail of four very interesting cases, and closes as follows: "I think in genuine, uncomplicated cases of cholera morbus, especially where there is a tendency to dysenteric discharges after the first onset, of which I have had a number previous to obtaining this remedy, it would be invaluable, as it seems to relieve promptly."

Dr. D. Sinclair, of Tonawanda, N. Y., reports "that he has used arsenite of copper in the treatment of summer diarrhœa of adults and children, in chronic diarrhœa, typhoid fever, irritable stomach, and in anæmia with gastric and bowel trouble with good effect. In the bilious attacks which are so common to children in the hot season, the children tolerated large and often-repeated doses, and especially where the symptoms were severe, the vomiting and other symptoms generally ceased as if by magic, and improvement commenced with the first dose. . . . . In anæmia, with irritable stomach and bowels, the patients were soon able to tolerate more food, the body increased in weight, the lips became rosy, and, when the monthly periods had ceased, they were re-established."

The report of Dr. A. I. Lawbaugh, of Opechee, Mich., so accords with my own observations that I transcribe the following: "My first case was an infant of eleven months, suffering from cholera infantum, bordering on the stage of collapse. After the arsenite was administered, the child vomited but once, the stools became less frequent. and in three hours the child was on the way to recovery. I treated a number of similar cases almost invariably with the same success. When failure occurred it was either because the medicine had not been given according to directions, or else too late.

"My first administration of the drug to an adult was in a case of cholera morbus, where the patient had been under other methods of treatment for twelve hours without benefit. After the first dose he vomited but once, the bowels moved no more, and in twenty-four hours after beginning the treatment he considered himself well. I used it in many similar cases with equally good results."

Dr. C. C. Stockard, of Columbus, Miss., has given the drug a fair trial in various disorders: in cholera morbus it has given prompt relief; in some cases of diarrhœa in children it has been less satisfactory, but in a number of cases which threatened to develop into typhoid fever relief has followed in the course of a few days.

Dr. E. C. Dupont, of Grahamville, Beaufort County, S. C., says his experience has been somewhat limited, but he has used the arsenite in two cases of cholera mor-

bus, and in each instance the medicine acted promptly in checking the vomiting and purging.

Dr. F. F. Field, of Elroy, Wis., has had the misfortune to meet with quite a number of very obstinate cases of dysentery which failed to yield to any of the ordinary remedies, and has not been successful with arsenite of copper. He has used it in but two cases without the aid of other medicines, but was compelled to discontinue its use after a day or so, an observation which should not be overlooked in connection with the suggestion made regarding the use of opiates.

Dr. John Swain, of Ballardsville, Ky., writes for himself and his partner, Dr. Weeks, giving an instructive account in detail of no less than twelve cases, covering diarrhœa, dysentery, cholera morbus, and cholera infantum, in which the arsenite was used with great satisfaction. This communication, I hope, will soon be published, and it will be sufficient to say that both these gentlemen "are thoroughly convinced of the efficiency of the remedy."

Dr. E. C. Linn, of Monmouth, Ills., writes that he has used the tablets in a number of cases of typhoid fever where there was diarrhœa, and in the majority of instances it acted very promptly. In other bowel affections it has not always been successful, although he records one severe case "where it acted like a charm." The patient had been suffering all the morning from cramps and active purgation, and the arsenite was exhibited about 2 P.M., but when he called again about five o'clock, the patient had recovered and gone out.

Dr. W. F. Spragins, of Aberdeen, Miss., reports in detail a series of six cases in which the use of this drug was attended with most excellent results. One case was that of a man æt. thirty-three, who complained of having an annoying, griping pain about the umbilicus. He says: "Here the arsenite of copper acted like a charm, one tablet being all that was required to bring about permanent relief . . . . ."

Dr. John M. Buckingham, of Springfield, Ohio, sends a general report, in which he mentions that he has succeeded admirably with the preparation in the treatment of several cases of typhoid fever. "I purpose adding the remedy to my regular armamentarium, and have every confidence that future use will verify what is claimed for it." The statement of Dr. Buckingham is one that I can fully indorse, especially in the matter of treating typhoid fever, and now that I understand its action so well in this disease, it would seriously embarrass me were I compelled to eliminate this drug from my list.

Dr. L. G. Broughton, of Reidsville, N. C., sends a lengthy report which I shall advise him to publish, as it covers the treatment of the diarrhœa of phthisis, that of dysentery, and also that of chlorosis, already referred to, and is on the whole an excellent testimonial to the great value of the drug in this class of cases. Dr. Broughton is very positive that the good results he has witnessed are due to the influence of the remedy.

Dr. W. E. Shelton, of Appleton City, Mo., writes that he has used it in a number of cases, with very satisfactory results; the cases he reports include five cases of diarrhœa in children, ranging in age from six weeks to three years, and two cases of dysentery. He adds: "I must say that I had but little faith in the remedy in such small doses, but am now satisfied that it will prove to be one of the best remedies in diarrhœa and dysentery."

Dr. J. F. Escher, of San Diego, Cal., says he has used the remedy in ten cases, ranging in age from six months to forty-six years, and in most of the cases the bowels were checked after giving six doses at intervals of ten minutes, and in every case the diarrhœa was checked before one full tablet had been taken. In only two cases was there a disposition for the bowels to become loose again after a day or two, and these were in children fed on fresh, unboiled milk, which the stomach failed completely to digest.

In concluding this somewhat imperfect epitome of my correspondence upon an important topic, I may add that I still have a large number of cases included in reports which have not been mentioned, but space and time forbid, and the foregoing is submitted with the hope that the readers of this journal will properly estimate the value of the testimony in favor of this drug. Should there be any doubt in the minds of some, I can only refer them to the remedy itself, the use of which will furnish the best evidence of its great advantage over the methods of treatment usually practised.

JOHN AULDE, M.D.
4719 FRANKFORD AVENUE, PHILADELPHIA.

MEDICAL PROGRESS.

Gonorrhœal Ophthalmia.—In gonorrhœal ophthalmia M. HIGGENS first washes the conjunctiva with a 5 per cent. solution of boric acid, then uses the following ointment spread upon linen and placed over the eye:

℞.—Hydrarg. ox. flav.	. .	gr. jss.
Cocaine.	. . . .	grs. vijss.
Acid. boric.	. . . .	grs. xvij.
Vaseline	. . . .	℥j.—M.

—*Monatshefte für praktische Dermatologie*, Oct. 1, 1889.

Excision of Rectal Cancer.—At a discussion in the Surgical Section, British Medical Association, on the treatment of rectal cancer, MR. W. HARRISON CRIPPS formulated his views on excision as follows: Probably not more than 15 or 20 per cent. of cases are in any way benefited by the operation, and such cases are difficult to select from among those in which excision is not indicated. The operation should not be undertaken unless the patient's constitutional condition is good, or unless the entire neoplasm can be removed; hence it is important to determine whether or not the bladder, upper part of the vagina, or uterus are involved, and whether the growth is confined to the lower portion of the rectum. If the finger cannot reach healthy mucous membrane removal is not justifiable. Implication of the ischio-rectal fossæ or of the lower part of vagina does not necessarily contraindicate excision.

For the operation the patient should be prepared by a dose of oil twenty-four hours previously, and within two hours of the operation, a warm-water enema. The patient is then anæsthetized and arranged in the lithotomy position with the buttocks raised by a hard pad. A strong sharp-pointed curved bistoury guided by the finger or speculum is passed into the bowel and by transfixion made to protrude through the skin at the side of the coccyx. The intervening tissues from this point to the anal margin are then cut through. If the incision is cleanly made and as nearly as possible in the median line

the hemorrhage will not be great and can be controlled by the pressure of a sponge.

A crescentic incision is now made, extending from the margin of the first cut to a point in the middle line in front. This cut should be made boldly and sufficiently deep to extend well into the fat of the ischio-rectal fossa. If the skin around the anus is healthy, the cut should be confined to the mucous membrane. The forefinger thrust into the incision will now readily separate the bowel from the surrounding tissue except at the insertion of the levator ani, where scissors should be used. A piece of sponge is now thrust into the cut to control bleeding, while the opposite side is treated in the same manner, when the vessels of both sides should be clamped.

The anterior wall is next separated by a careful dissection, which in the male is facilitated by a sound in the bladder. When the dissection is carried beyond the disease the bowel is drawn down with moderate force by a vulsellum forceps. The diseased bowel should then be cut off with strong curved scissors, clamping all vessels that bleed. Stitching the cut edges of the bowel to the anal margin should not be attempted, as it forms pockets in which discharges collect. A piece of rubber tubing five or six inches long is then passed into the bowel. Next a square of lint with a central hole to pass over the tube, is smeared with eucalyptol ointment and gently pressed into the wound, the space between the lint and the tube is packed with iodoform wool, and the whole retained with a T-bandage.

Thirty-six hours after the operation the wool is removed, the lint being left in position and syringed with carbolic solution.

As the wound heals it is important to guard against contraction, which would cause an intractable stricture. If contraction is noticed during cicatrization, a full-sized conical rectal bougie should be daily passed until the wound is healed.—*British Medical Journal*, October 12, 1889.

Turpentine in Whooping-cough.—DR. VASCENCELLOS DES POST employs turpentine in whooping-cough by dropping it upon the child's pillow, thus causing constant inhalation of the vapor, as an enema, in capsules, or with belladonna in the following formula:

℞.—Tinct. belladon. . . .	♏ xx.
Ol. terebinth.	f ʒij.
Syr. althææ	f ʒiij.—M.

Of this a tablespoonful may be given every two hours.—*L'Union Médicale*, October 12, 1889.

Ichthyol in Skin Diseases.—DR. KARL KOPP has used ichthyol in a number of different skin diseases and with varying results. He prefers the ammonium sulphichthyolate, which he not only applies externally in ointments and solutions, but also administers internally in the form of pills. He finds that patients can take more than a drachm daily without harm.

Dr. Kopp's results were as follows:

In acne rosacea and pustulosum, the external and internal use was of great benefit after seven months' treatment. Applied externally only, the results were less marked than when given internally alone.

In acne vulgaris, ichthyol combined with daily applications of sublimate solutions, occasionally produced good results, but oftener not.

Angioma was not influenced by the drug.

Facial erysipelas was usually cured in from three to five days by a 30 to 50 per cent. ichthyol ointment spread upon linen.

Acute eczema was, in a few cases, improved, but in many more aggravated; and in chronic eczema the effect was in no instance curative.

Prurigo mitis improved under the local application of a 10 per cent. solution, but the improvement was invariably temporary. In prurigo ferox the results were even less satisfactory.

In a few cases of senile, neurotic, and idiopathic pruritus, the internal administration of ichthyol, combined with the external application of a 30 to 40 per cent. ointment, diminished the itching, but in others this effect was not apparent.

Seborrhœa sicca capitis was uninfluenced by the drug, The statement of Unna that after the scraping of lupus or removal of papillomata, the application of pure ichthyol caused satisfactory cicatrization, Dr. Kopp is unable to confirm.—*Monatshefte für praktische Dermatologie*, October, 1889.

Herpes Genitalis.—The *Gazette de Gynécologie* of October 15, 1889, gives the following directions for the treatment of this condition: When the skin has a considerable tendency to dryness, frequent applications of vaseline should be made; or if, on the other hand, moisture is present, this powder should be used:

Subnitrate of bismuth . .	15 grains.
Tannic acid	75 "
Powdered starch . . .	3 ounces.

When the surface is washed, the water used is carbolized, and, if ulcerations occur, they are to be treated by astringent dressings, but never by cauterization.

Suspension in Locomotor Ataxia.—In the *Lancet* of October 19, 1889, the results of treatment by suspension in fourteen cases of tabes are tabulated by Drs. Russell and Taylor. Three of the cases improved while undergoing the treatment. One improved at first, but during the last three weeks he had a relapse, and when he left the hospital was certainly worse than he had been a month before. Another case had, between April and June, a course of twenty-five suspensions, but experienced no improvement. A month after this the ataxy became much more marked, and the suspensions were resumed. After ten suspensions he began to improve, and this improvement was maintained until he left the hospital. Considering the negative result of the first course of suspensions in this case, the improvement during the second course can scarcely be regarded as anything more than a coincidence. One case said that he thought he walked better and was more steady, but neither Dr. Ormerod nor the house-physicians, observing independently, could say that there was any improvement to be seen. In another case commencing optic atrophy was the prominent symptom, and although the patient himself said he thought his vision was better, careful testing did not confirm this.

In the cases in which improvement did occur, this consisted in a less ataxic gait and a greater steadiness in standing. In no case, however, was there ability to stand with the eyes closed, nor was there a return of the knee-

jerk or of the pupil reaction to light. In one case the shooting pains were relieved somewhat, but in none of the cases had they been either a recent or a prominent symptom.

In the greater number of the cases it will thus be seen that there was no improvement. Most of them remained practically in the same condition, but in more than one there was an evident retrograde tendency.

Injection for Uterine Cancer.—In the *Gazette de Gynécologie* of October 15, 1889, we find the following treatment, as recommended by CHERON:

Salicylate of soda	100 grains.
Salicylic acid	15 "
Tincture of eucalyptus	2½ fl. oz.
White vinegar	1½ pints.

Add one or two tablespoonfuls of this mixture to two pints of warm water, and inject into the vagina several times a day until the disagreeable odor is destroyed.

The Use of Naphthol in Typhoid Fever.—BOUCHARD, in the *Gazette Hebdomadaire* of October 4, 1889, recommends the use of this substance in the treatment of typhoid fever. The method carried out is as follows:

As soon as the disease is discovered to be present, calomel is given amounting to from four to eight grains, divided into two doses. On the next day the naphthol is administered, either alone or with the salicylate of bismuth, or, better still, with the salicylate of magnesia. If the diarrhœa is severe, the following treatment is to be employed: β-Naphthol thirty grains; made into ten powders, and one of these given every few hours. If the looseness of the bowels persists, salicylate of bismuth is to be added to the dose, three grains every two hours.

On the other hand, if constipation is present, salicylate of magnesia is to be employed in the same dose.

Treatment of Pigment Spots in Pregnancy.—MONIER, in the *Monatshefte f. praktische Dermatologie*, recommends the following formula for the treatment of this annoying condition:

White precipitate	1½ grains.
Oxide of zinc (pure)	4½ "
Castor oil	2 ounces.
Cacao butter	2 "
Essence of roses	q. s.

To be applied night and morning.

Butylchloral in Facial Neuralgia.—LIEBREICH recommends butylchloral in facial neuralgia, using doses varying from fifteen to forty-five grains a day. The formula employed is as follows:

Butylchloral	45–75 grains.
Alcohol	2½ fluidrachms.
Glycerine	5 "
Distilled water	4 fluidounces.

Of this the patient is to take a tablespoonful at a dose.

Surgical Treatment of Peritonitis.—At the recent French Congress on Surgery the following views were announced:

PROFESSOR DÉMOSTHÈNE, of Bucharest, advised that in tubercular peritonitis the abdomen be opened, the cavity washed with boric solution, and drainage continued as long as there was discharge. By these measures he believes that the patient is rendered more comfortable and life prolonged. In purulent peritonitis, he thinks the same treatment should be adopted if the case is seen early and is in fairly good condition. If in this disease operation is delayed the results are unsatisfactory. Localized purulent peritonitis should be treated as an abscess in any location. Professor Démosthène does not consider sublimate or carbolic solutions inadmissible, but seems to prefer boric acid.

M. DEMOUS, of Bordeaux, believes that if laparotomy is undertaken in peritonitis it should be done early, and thinks that physicians are too tardy in summoning the surgeon.

M. BOUILLY insists that in purulent peritonitis a large incision is unnecessary, but the peritoneal cavity must be thoroughly washed out with a boric solution or a 1 : 6000 sublimate solution. This should be done with a canula sufficiently long to reach all parts of the cavity.

M. DENUCÉ washes the peritoneal cavity with sterilized water and sponges, and for drainage uses iodoform gauze.—*L'Union Médicale*, October 12, 1889.

Belladonna in Renal Calculi.—In the *Provincial Medical Journal* for October, DR. W. MURRAY reports three cases in which the passage of renal calculi was hastened and pain quickly relieved by the free administration of belladonna. In all cases the drug was pushed until the well-known toxic symptoms were marked. Dr. Murray believes that the action of belladonna here is analogous to its action in intestinal obstruction, a belief that seems entirely rational.

Hypodermatic Use of Mercury in Syphilis.—The Berlin correspondent of the *Medical Press and Circular* writes that DR. HEBRA still pursues this course of treatment of syphilis at the Polyklinik, but admits that it is not so successful on outdoor patients as those under special care, as one has not the opportunity of modifying the dose to the individual wants.

He uses one injection daily of a 90 per cent. solution of sublimate with 6 per cent. of sodium chloride added. Of this solution, one centigramme of the sublimate is injected, or 0.15 of a grain. The injection is made in the nates, going deep into the gluteal region on the right and left side on alternate days.

Twenty injections during three weeks are the usual number allowed for complete recovery. Infants and adults are treated on the same principle, with the dose modified according to age. Exceptions to this rule are found, however. Hebra mentions a case that he is now treating at the clinic as an example of difficulty. The case has been under his notice for three years, and been injected 350 times. No effects of the drug can be obtained, but severe sickness when pushed.

The danger of abscesses forming at the site of injection is small, as he has used it for five years and now says he never had a single untoward case, although he has treated 800 such cases, and at an average of 20 injections that would be 16,000 injections. The pain of injection may be raised against the treatment, but this seems to the patients a trifle.

The advantages gained far more than counteract the disadvantages. The drug immediately enters into the circulation, where the mercury seems to combine with the albumin and form a very stable compound, as it is long before it is thrown off from the kidneys. Accord-

ing to Bockhart's experiments, it is three weeks before anything is seen after commencing the use of this chloro-soda-mercuric compound.

The drug administered thus is observed to act rapidly and last longer than in any other method. As to the period of delay before any sequelæ appeared, he could not give figures, as many of the patients would go to the nearest attendant for medical advice.

Electrical Stimulation in Apnœa during Anœsthesia.—DRS. H. A. HARE and EDWARD MARTIN, in an exhaustive study upon stimulation of the diaphragm in apnœa, conclude that by far the most important practical point to be gained from their observations is in regard to the methods commonly used in the application of electricity to persons who have ceased breathing, particularly during the action of an anæsthetic. While few text-books give any specific directions concerning the practical application of such methods, those that do so force the physician to a method at once dangerous and impractical, for the directions usually given are to place the positive pole on the phrenic nerve as it crosses the anterior scalene muscle at the root of the neck, the negative pole being pressed against the lower margin of the ribs, and a rapidly interrupted current being used with the purpose of causing contraction of the diaphragm by the direct action of the electricity upon the nerve. Even theoretically this is a possible source of danger, and practically they have proved danger to be an ever-present fact under its use. The cardiac inhibitory nerves run so closely to the phrenic fibres, and respond so readily to electrical stimulation that it is hard to imagine how they can escape stimulation if a current be used of sufficient strength to excite the phrenic nerves near by. By practical experiment they have proved that inhibition of the heart may not only be possibly brought about by this method, but that it is nearly impossible to avoid its production if the phrenics are to be reached at all.

The electric brush produces a more powerful effect upon the terminal extremities of the sensory nerves than any known method of stimulation. Far more powerful than the douche and than abdominal applications of ether, as recommended by Hare, it should be used under all circumstances when death threatens from respiratory failure. It should not, however, be applied to the neck, but a sponge electrode being placed at the base of the ribs the brush should be applied at intervals to the epigastrium, to be removed when inspirations result, and reapplied when breathing movements cease. If artificial respiration is being carried on by Sylvester's or other of the recognized mechanical methods, the wire brush should be applied during the inspiratory movements.

It would seem probable that in those cases where the use of electricity has been resorted to, the return to life has been the result of reflex stimulation rather than a direct effort on the phrenic nerves.—*University Medical Magazine*, November, 1889.

Sulphate of Copper Injections in Dysentery.—In the *Lancet* of October 12, 1889, DR. W. EASLEY reports a case of dysentery cured with rectal injections of sulphate of copper. The patient had been suffering for about a month with the usual symptoms of the disease, and had been treated to little purpose with bismuth, gallic acid, and ipecacuanha. Finally, when he was growing worse, a solution, consisting of ten grains of sulphate of copper and one drachm of tincture of opium, in four ounces of water, was injected high into the rectum by means of a soft-rubber catheter. The injection caused no pain, in a few hours tenesmus was relieved, and blood ceased to pass. On the two following days a small amount of blood reappeared, and the injections were repeated, but from that time convalescence was rapid.

Intestinal Obstruction.—DR. GELPKE reports in the *Correspondenzblätter für Schweizer Aerzte* four cases of intestinal obstruction, of which two had been operated on—one with success—and two had been successfully treated with metallic mercury. From these cases he concludes that quicksilver is a valuable remedy in cases of obstruction, and that the metal seems to be quite innocuous to the system if not too long retained. It had been so retained in one of the two cases in which four teaspoonfuls of quicksilver had been given, and the feces and urine of the patient contained the drug for twelve weeks. There were other distinct symptoms of mercurial poisoning, such as great emaciation, excitement, loss of hair, and some stomafitis. The other patient, on the contrary, showed no signs of mercurialism whatever. He considers that in hernia it is generally advisable to commence the abdominal section from the orifice of the sac. Finally, considering the uncertain and not very successful attempts of laparotomy, he would not operate before other means, such as quicksilver, have been tried for from four to six days.

DR. S. V. REITZ, in the *Centralblatt für Chirurgie*, reports the case of a laborer suffering from obstruction of the bowels who, after three days' fruitless administration of purgatives, was brought to the hospital. Fecal vomiting was present, and a tumor could be felt on the left side of the umbilicus. Enemata of water by the long tube, though as much as six pounds of water were injected, were unsuccessful, but the vomiting and sickness improved after repeated washing out of the stomach. The next day the patient was considerably worse, and fecal vomiting returned, with cold perspiration, restlessness, meteorismus, a pulse of 120, and a temperature of 100°. After the enema with the long tube had been again used, and the stomach repeatedly washed out, without any improvement, seven drachms of bicarbonate of soda in five ounces of water were injected into the rectum, followed by three drachms of tartaric acid in the same amount of water, and the anus closed. The patient, who was on his knees and elbows, complained at once of severe abdominal pains, and in five minutes the injection came away with exceedingly offensive flatus. Shortly afterward the patient felt considerably better. In three hours the enema was repeated with half the previous doses, and was shortly followed by a large loose motion, and by a second later on. The patient completely recovered.—*Lancet*, September 21, 1889.

Sulpholeinic Acid has been called "polysolve" by Mr. H. Wilson, of Manchester. This product is produced by the action of sulphuric acid upon any kind of vegetable oil, and when concentrated is a yellow viscid liquid. It is capable of dissolving a large number of organic and inorganic substances, two per cent. of sulphur, three per cent. of iodoform, twenty-five per cent. of camphor, etc. —*The Pharmaceutical Journal of New South Wales*, September 16, 1889.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.

SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, NOVEMBER 9, 1889.

THE CHOICE OF ANÆSTHETICS IN LABOR.

ALTHOUGH there are still a few aged practitioners who assert that it is wrong to use anæsthetics in labor, chiefly on the ground that the Almighty intended women to suffer in childbirth, the majority of the profession recognize the fact that the proper employment of some transient pain-relieving agent is a procedure almost as much in the line of duty to the parturient woman as the safe delivery of her child. That these drugs are often abused there can be no doubt: either they are pushed to such an extreme that the uterine muscle is relaxed and does not expel the fœtus, or fails by its contraction to prevent post-partum hemorrhage; but such objections hold good in every case where a drug is wrongly employed, and should not militate against a proper use of a medicinal substance.

With a regularity equal to a quotidian malarial paroxysm, the medical journals of the world, and more particularly of the English-speaking peoples, break out into long discussions as to the values of the various anæsthetics, the dangerous effects of chloroform and ether, and the assertions of masses of professional men arranged in opposing lines, which on the one hand support chloroform with a fervor only equalled by their opponents, the advocates of ether. The questions concerning these facts are now under study and discussion, and we cannot forbear the opportunity of pointing out what we believe to be the true aspect of the case.

The most enthusiastic supporters of chloroform for professional favor cannot, and do not, deny that the drug has a far larger list of deaths than has ether, even when the administrators were skilled physicians; and on the other hand, the advocates of ether cannot take exception to the statement that it very commonly produces nausea and vomiting with irritation of the lungs, all of which symptoms are peculiarly distressing in abdominal diseases or wounds. No one, we believe, will assert that death occurs as suddenly from ether as chloroform. The one is essentially a cardiac and respiratory paralyzant, the other a cardiac stimulant, except in overwhelming doses, and a respiratory stimulant until large amounts are given. As a consequence of this it at once becomes evident that in the hands of any person chloroform is the more dangerous drug of the two, and when employed by the unskilled nurse or physician possesses power for the greatest harm. Further than this, chloroform acts dangerously upon the heart in two ways, both of which may be present at once, and act immediately after the first whiff of the drug. It may stop the heart by stimulation of the vagus nerve or by paralysis of its muscular fibres. Indeed, many deaths from chloroform have occurred after the earliest inhalations and not after its prolonged employment. Idiosyncrasy has also a prominent part in its lethal power, and no number of previous anæsthetizations can be regarded as evidence of safety in an individual case. Ether kills by a slow failure of respiration, or very rarely, probably never in those cases where it is given to a healthy man, by failure of the heart which is progressive and not sudden. The one shows its danger signal, the other strikes its death-blow as does a bullet in the heart.

We do not wish to be understood as universally condemning chloroform; far from it. We believe that in many cases it is preferable to ether, but in the case of a healthy man there can be little doubt that the latter is the safer drug. Neither of them is to be condemned, for both have their parts to play. The surgeon and accoucheur should not be asked whether he uses chloroform or ether for all cases, any more than whether he employs morphine for all patients suffering with insomnia. There should be no factions in the profession in this respect, and no preference be shown to either drug by any body of men. The laws which are to be laid down are founded on therapeutic reasoning, not on dogmatic preference. No one has a right to

take the patient's life in his hand where it is so lightly balanced that nothing can save it should it suddenly fail, and for this reason ether is to be the more generally employed. On the other hand, the presence of acute or chronic bronchitis, of acute or subacute renal disease, of dilated or fatty heart, seems to us to call for the employment of chloroform.

In the former states the large amount of ether given is apt to irritate the lungs and the kidneys, or in the state of excitement and struggling so to strain the heart that the danger of cardiac failure is imminent. The same reasons hold good where atheromatous bloodvessels exist, and where, in consequence, apoplexy is feared from the struggles and increased blood-pressure produced by ether. The number of deaths during labor due to chloroform inhalations have been surprisingly few, for what reason we know not, unless it be that only a very little of the drug is generally given. There are no deaths from ether in the same state. The disagreeable preliminary signs of the inhalations of ether may be avoided if it is given so diluted with air as to anæsthetize the fauces before it is pushed in a concentrated form, and the after-symptoms of nausea and vomiting are rarely seen in parturient women, unless its use is excessive. Finally, we may be allowed once more to insist upon the statement already made, namely, that each has a field of its own and that neither one can be used to the total exclusion of the other.

HYPODERMATIC MERCURIAL INJECTIONS IN THE TREATMENT OF SYPHILIS.

The modes of administering mercury are, fortunately, numerous. In many cases in which the need of this drug is most imperative, the gastro-intestinal tract is so irritable as to preclude its administration *per os*, and compel recourse to inunction or fumigation. Both these methods are open to objection: the first on the score of cleanliness, the second on account of the elaborate nature of the proceeding and the publicity which it is almost sure to involve. For these reasons the addition of mercury to the long list of hypodermatic medicaments was a welcome and, there is good reason to believe, a permanent one. This opinion may be maintained in spite of the fact that the latest report on the treatment of syphilis by hypodermatic mercurial injections is rather unfavorable.

Leloir and Tavernier (*Journal des Maladies Cutanées et Syphilitiques*, No. 3, 1889) have practised 1573 mercurial injections in syphilitic cases of all grades of intensity, and in every stage of the disease. Of these injections, 875 were made with calomel suspended in vaseline; 642 with yellow oxide of mercury suspended in vaseline; and 56 with "gray oil," as in the following formula:

Vaseline	40 grammes.
Ethereal tincture of benzoin .	5 "
Purified mercury . . .	20 "

Of this mixture one-third of a Pravaz syringeful was injected every ninth day.

The authors believe that this method of treatment can never come into general use, and state that a number of their hospital patients preferred discharge to submission to it.

Its sole advantage is, in their opinion, the rapidity with which it causes erythematous and other syphilides to disappear from the integument, its action upon mucous syphilides being slight. Of the three substances employed, calomel is the least, and "gray oil" the most effective.

The objections to the method are: violent pains, lasting, on an average, from one to three days, sometimes much longer; paresis of the lower extremities; vertigo and cephalalgia; diarrhœa, etc. In no instance did the injections cause suppuration.

In conclusion, Leloir and Tavernier state that in the immense majority of cases they prefer mercurial inunction to hypodermatic injection of mercury. They found that cutaneous eruptions disappeared quite as rapidly under treatment by inunction, and mucous eruptions much more so. The eruptions having disappeared, they keep their patients in a condition of "mercurial impregnation," by means of pills of bichloride or protiodide of mercury, and repeat the frictions at variable intervals. This treatment is continued during one or two years, and iodine is withheld until the second year. They believe that by such a plan of treatment the best results are to be secured, and their great experience entitles these views to the most respectful consideration.

REVIEWS.

A Treatise on Gout. By Sir Dyce Duckworth, M.D. Edin., etc. With Frontispiece and Illustrations. 8vo., pp. 476. Philadelphia: P. Blakiston, Son & Co., 1889.

"I have bin very careful to write nothing but what was the product of careful observation. Soe when the scandall of my person shall be layd aside in my grave,

it will appear that I neither suffered myselfe to be decieved by indulging in idle speculations, nor have decieved others by obtruding anything to them but downright matter of fact."

With these quaint words we find the opening page of this interesting book strewn; words which, arising as they did from the immortal Sydenham, represent a desire too little seen in scientific and clinical studies nowadays; and which form with other abstracts a proper prelude to a thorough study of a condition little understood in any of its parts, and one which, with its sister, rheumatism, stands as a rebuke to the medical progress of the day.

While recognizing the complexity of the subject in hand, the writer seems to us to have written an unusually clear exposition of a state usually hopelessly confused and unreal, and apparently has followed, almost everywhere, the quotation just given. He has pointed out the relation between gout and other morbid states, and adheres closely to the theory concerning the dependence of disease upon the existence of distinct diatheses; an adherence which he himself recognizes as one which, at the present time, is apt to bring a storm of adverse criticism upon his head. It is impossible in these pages to review thoroughly so complete a study and one upon which the author has expended so much care and clinical research. The disease is defined, its pathological nature is studied, and its pathogeny followed with the care of an accurate clinical student of medicine. The question of its hereditary transmission is fully considered, and an interesting chapter is devoted to the states which are believed to be similar in the lower animals. In the last chapters the question of therapeutics is thoroughly discussed, and we are glad to see that no less than one hundred and six pages are devoted to this subject.

The only chapter which we are disappointed in is that upon "Pyrexia in Gout." We turned to these pages with the hope that we might at least find some careful study of the manner in which such variations in temperature may occur. No such observations are made and nothing is said concerning the hyperpyrexias which sometimes come on suddenly in gouty people. Even under the heading of "Retrocedent Gout to the Brain," no mention of such a state is to be found.

Sir Dyce Duckworth has written a very useful and interesting work on gout. He does not seem to have drawn about it a vast amount of contemporaneous literature nor of experimental study, but has brought forth a book which typifies its author in its careful and perhaps laborious treatment of a disease concerning the character of which clinicians must know more than those given to original research. Written on the soil where gout in all its forms delights to revel, a wealth of cases naturally adorns its pages and a colored figure shows a state common enough in England, but more rare in this country, *i. e.*, gouty deposits in the eyelids.

To those who are interested in these troubles and who find patients with sufficient English blood to possess the ailments of their grandsires, we heartily recommend the book. Written in an unusually interesting style, it is easily read and will give such information about the treatment of gout as will enable the ordinary practitioner to benefit his patients by its perusal.

A COMPEND OF PHYSIOLOGY. By ALBERT P. BRUBAKER, A.M., M.D. Fifth edition. Revised and enlarged. Illustrated. Philadelphia: P. Blakiston, Son & Co., 1889.

WITH such a book as this one before us it is almost impossible to give anything more than a notice of the fact that a fifth edition has appeared.

To review a quiz compend is an unnecessary task, since it is not supposed to present any new views nor to be worthy of such a dignity. To say anything in the way of criticism concerning a book which students have rejoiced in up to a fifth edition is equally difficult, and to find fault with a compilation which has been added to by an active teacher during years of experience is to seek for those little flaws which are present everywhere in every work, and singularly absent in this. The only just criticism which we can make is in regard to the tables, which give with mathematical exactitude the chemical constituents of certain secretions or parts. Practically, the student is never expected to burden himself with such figures, and a compend is supposed to deal only with what he must know. The book before us teems with interesting facts, and we shall shortly expect to see a sixth edition appear on the publishers' shelves.

STUDENT'S AID SERIES. Vol. I. 12mo., pp. 200. New York: G. P. Putnam's Sons, 1889.

THIS is the first part of a series bearing the marks of this well-known American house, although the authors are residents of England. The volume is divided into three parts, all of them on diagnosis. Parts I. and III. are by J. Milner Fothergill, while Part II. is by Thorowgood. The latter considers diagnosis from its physical standpoint, while Fothergill writes on semeiology, and "what to ask" when searching among the symptoms for the signs of disease. Both these articles can be read in Fothergill's *Handbook of Treatment*, but they are undoubtedly valuable enough to make the possessor of this little book a fortunate purchaser. The type is very small, and the ink is unevenly distributed; a fault common in books printed in England, but which are sent over to take an American imprint.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, October 9, 1889.

THE VICE-PRESIDENT, JOHN B. ROBERTS, M.D., IN THE CHAIR.

DR. LAWRENCE WOLFF read a paper on

THE CHEMISTRY OF THE FUNCTIONAL DISORDERS OF THE STOMACH.

DR. FREDERICK P. HENRY read a paper on

THE DIAGNOSIS AND TREATMENT OF FUNCTIONAL DISEASES OF THE STOMACH.

(See THE MEDICAL NEWS, October 26, 1889, p. 449.)

DR. H. A. HARE: I wish simply to suggest a possible explanation of the results of one investigator referred to by Dr. Henry, who found a large quantity of hydro-

chloric acid in the stomachs of persons who had been fasting. Dr. Beaumont and others have found that any foreign body introduced into the stomach will cause a secretion of gastric fluid. I do not see why such an outpouring of fluid might not be produced by the introduction of the rubber tube.

DR. J. P. CROZER GRIFFITH: I wish simply to bear testimony to the value of the tests for hydrochloric acid presented to us this evening, and to say that if the method devised by Dr. Wolff proves one by which the clinician can make a quantitative analysis rapidly and easily, I think much will have been gained. Perhaps many hearing Dr. Wolff speak, and knowing how conversant he is with chemical procedures, may think these manipulations are beyond our skill. Speaking as a clinician who has no special knowledge of chemistry, I can say that I have used these tests for several years, and with great satisfaction. Methyl-violet has proved reliable and delicate, as has also Congo paper. Probably I have failed to obtain the proper variety of tropæolin, though two different kinds have been used, for success has attended none of the trials I have made of it. With Günzburg's test I have no experience. The principal difficulty which we encounter in this country lies in securing the consent of the patients to the withdrawal of the contents of the stomach.

As is well known, attention was first directed to the subject by the investigations of Riegel and others, with reference to the mutual relation of hydrochloric acid and carcinoma of the stomach; the claim having been made that in this disease free hydrochloric acid is always absent, and the peptic strength of the gastric juice diminished. Much strife has arisen over the matter, which has nothing to do with the subject under discussion tonight, except that these investigations led to the study of the secretion in functional disorders of the stomach. An interesting point in this connection which seems to have been undoubtedly proved is, that in the majority of cases of dyspepsia we are not dealing with a diminution of the gastric secretion of hydrochloric acid. It is poured out too soon, or in too great quantities. We are, therefore, working on a wrong basis if in every case of dyspepsia we straightway administer pepsin and hydrochloric acid. In many cases an affection which starts as a functional disturbance may end as an organic disease. There is no question that too much hydrochloric acid will produce gastric ulcer. Gastrectasia is due also to an excessive secretion of the acid, which, being secreted before the normal time for it to appear, interferes with the digestion of the starches. These consequently remain too long in the stomach, accumulate there, and by at last interfering with its motor power, produce the dilatation.

DR. JAMES TYSON: I used the tests which have been described by Dr. Wolff in a patient suffering with cancer of the stomach, with the results described. In this case it seemed that there was a deficiency in the hydrochloric acid of the gastric juice. My experience with tropæolin was similar to that of Dr. Griffith; perhaps for the same reason.

DR. S. SOLIS-COHEN: In the limited experience which I have been able to obtain from a few patients, I have been unable to confirm the clinical value and the diagnostic value of these tests. It may be through some fault of my own. With the phloroglucin-vanillin test and Congo red there was no difficulty in demonstrating the presence of hydrochloric acid. With all due respect to the eminent observers who have recorded their researches in this matter, I am unable to see that we are much advanced in diagnosis, of either functional or organic disease of the stomach, by these tests. As has been suggested, the very presence of the tube may interfere with secretion. Cases have come under my observation where the too frequent or improper use of the tube has rather aggravated the condition. I would not, however, decry lavage as a therapeutic agent. I use it constantly, with good results.

I have been much interested in the remarks in regard to the connection between lithæmia and nervous dyspepsia, and am satisfied that many of these cases are intimately connected with the uric acid diathesis. There is a vicious circle: the dyspepsia, the neurasthenia, and the uric acid in the blood. Which is the first, and which the last, is difficult to determine. I have found that the uric acid element was the weakest part, and treatment directed under the supposition that we were dealing with a case of lithæmia produced results quicker than any other.

I have thought that much of the pain complained of some time after meals was due more to faulty intestinal digestion than to gastric disturbance, and with the use of pancreatin, properly guarded, I have relieved the pain. Hoffmann's anodyne is also useful in these cases, not only from its anodyne effect, but from its effect upon the pancreatic and intestinal secretions. These remarks are simply supplementary to those of Dr. Henry, and are not intended to take issue with what he said.

DR. ALBERT P. BRUBAKER: There is one symptom of impaired motility not alluded to by clinicians which may be of importance in the diagnosis of gastric disorders, and which is connected with the process of deglutition. According to the current works on physiology, after the food passes from the mouth into the pharynx it is grasped by the constrictor muscles, and by a rapid peristaltic action forced through the œsophagus into the stomach. The experiments of Kronecker and Meltzer have shown that deglutition is not due to a peristaltic action, but that after the food passes the isthmus of the fauces it is thrown by the action of the mylo-hyoid muscles through the œsophagus to the cardiac orifice, which is normally closed. If auscultation is made over the xiphoid process at the beginning of an act of deglutition, a sound is heard five or six seconds later, which is due to the squeezing of the bolus through the cardiac orifice, and which is denominated the "squeeze sound." Now, if there be a relaxation of the cardiac orifice, there is heard immediately after a swallow of water a different sound, which is denominated the "squirt sound," and which is due to the propulsion of the water directly from the pharynx into the stomach. The squirt sound is heard in cases of relaxed cardia with a tendency to eructations and vomiting.

DR. HARE: I happen to know something of the investigations to which Dr. Brubaker refers, as I was Kronecker's student immediately after Meltzer. Dr. Brubaker has left out an important point—namely, that if, after swallowing the food or water, the subject immediately makes a second swallow, the portion previously swallowed will at once be precipitated into the stomach. If, however, the subject refrains from making the second swallow, the six seconds will elapse. The patient must

be cautioned to resist this tendency to swallow the second time.

DR. WOLFF: If Dr. Hare's suggestion were correct in regard to the effect of the tube, the gastric secretion should always be hyperacid. The fact is, that it is often anacid and often subacid. I have made with Dr. Davis, at the Philadelphia Hospital, some examinations of the gastric secretion of normal infants, and in all the cases that we have examined in the predental stage, there has been entire absence of hydrochloric acid. In the gastric catarrhs we find a subacid condition whether the tube is used or not.

After exhausting other measures, and after enlightening the patient in regard to the use of the tube, I generally succeed in gaining his consent, and after it has been used a few times it can be introduced without difficulty. I had one case which would vomit as soon as the pharynx was touched, but by persistent effort he got so that he would swallow the tube himself and wash his stomach out every morning. He was admitted to the hospital in a run-down condition, weighing eighty-nine pounds, and unable to leave his bed from emaciation in consequence of pyloric stenosis. He was discharged, weighing one hundred and fifteen pounds, after two months' treatment. I presented him to the Atlantic County Medical Society a short time ago, well and hearty, weighing one hundred and twenty-six pounds. Lavage is, of course, not indicated in every stomach case, but in the severe cases, where there is not only functional, but also organic, trouble, the mechanical treatment is of the greatest benefit.

DR. HARE: Dr. Wolff has misunderstood my remark with reference to the irritation of the tube. Dr. Henry referred to the investigations made to determine by the passage of the tube, whether gastric juice was or was not secreted during fasting, without reference to acidity or hyperacidity. I pointed out that the introduction of the tube would cause a flow of gastric juice.

DR. HENRY: The irritation caused by the introduction of a soft-rubber tube into the stomach is very slight, and its stay in that viscus not long enough to produce the amount of secretion removed from it in the fasting condition. This varies from one or two to four or five cubic centimetres. In regard to the observations of Beaumont, I do not think the quality of the secretion which he obtained by irritating the gastric mucosa was ever accurately determined. It was probably nothing more than a feebly acid mucus.

It is a most significant fact that no mention has been made of pepsin this evening. From the lavish manner in which it has been and is still prescribed, one might suppose that the absence of this enzyme is the root of every gastric ailment, whereas investigations prove that it is almost never absent from the gastric secretions. The amount necessary for healthy digestion is very minute. Bourget, whom I have already quoted more than once, has shown that one-tenth milligramme of pepsin is enough to suggest well-marked digestive power.

Dr. Cohen complains of want of success with these methods, and of the difficulty of applying them. I confess that the difficulty is great. Dr. Wolff seems to have been unusually fortunate in persuading his patients to submit to them. There can, however, be no doubt of the great value of these researches. The discovery of the hitherto unrecognized condition of hypersecretion is ample reward for all the labor expended in their pursuit.

Reference has been made to the swallowing sound, the *Schluckgeräusch* of the Germans. It is fully described in Part First of Ewald's work on *Diseases of Digestion*, but he attaches little or no diagnostic importance to it.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, October 7, 1889.

J. EWING MEARS, M.D., IN THE CHAIR.

DR. THOMAS G. MORTON read a paper upon

THE TREATMENT OF CLUB-FOOT; THE REMOVAL OF THE ASTRAGALUS IN EQUINO-VARUS.

DR. MORTON said that the results of treatment in many cases of congenital varus and equino-varus have been very unsatisfactory.

In no other department of surgery do we find so great a difference of opinion in regard to treatment, while the various kinds of apparatus which have been recommended for correcting the deformities are simply legion.

Congenital club-foot, which results from intra-uterine paralysis, may be mild or severe. More or less atrophy can always be found, and even under the most favorable surroundings is but partially recovered from; nerve supply to the limb is impaired, groups of muscles are affected, and, as in infantile paralysis, the stronger group overcomes the weaker and deformity follows.

Not only is the club-foot of less size than the foot of the normal side, but a comparison of the lengths of the limbs shows a general impairment of development, and with marked and permanent atrophy. This condition is more observable as the patient advances in life.

It seems reasonable to assume that the amount of deformity is in accordance with the period of intra-uterine life at which the palsy occurred. Paralysis coming on early in fœtal life is likely to give rise to the more severe forms of foot-deformity, as the tarsal bones, when in process of development, are then more readily distorted by muscular action; when palsy occurs toward the close of gestation, the tarsus is fully developed, and there is less opportunity for displacement.

There are cases of club-foot which readily yield to stretching, manipulation, and apparatus, or later on, possibly tenotomy, but the tarsal bones are in nowise involved in the deformity; such cases follow the palsy which occurs late in fœtal life.

There are others where the tarsus is found distorted at birth, with which, by immediate treatment and subsequent tenotomy, excellent results can be obtained, and the bones can generally be forced into proper position.

Without treatment, or by neglect after tenotomy, these cases, if the distortion is anterior to the astragalus, may require tenotomy, or tarsectomy, with or without open incision.

In some cases, after the open incision, a considerable gap is made when the foot is placed in the proper position, and in the subsequent healing of the wound we have a predisposition to the recurrence of varus; to avoid this, Dr. Morton turns upon the open wound surface a flap of integument, which may be taken from the dorsum or side of the foot.

Another class of cases are those where the nerve

lesion has probably occurred early in intra-uterine life, involving the entire tarsus; the astragalus is often found rotated and displaced forward, thus acting as a wedge, and preventing flexion and extension of the foot. Here tarsectomy only partially corrects the deformity; the same can be said of the open incision. In such cases, the removal of the astragalus must be considered, and if this bone is excised, the anterior tarsus need not be disturbed.

DR. MORTON exhibited several recent cases and photographs of astragalus excision, tarsectomy, open incision, cuboid and tarsus excision.

He was well aware that objections might be made to such radical operation as excision in young children. In the cases presented, the operation had been, however, for recurring varus, cases which are always difficult to deal with. He was equally confident, also, that in most cases of marked astragalus displacement, only a radical operation such as excision would give a satisfactory result. The operation is without danger, while the advantage of promptly correcting the deformity and avoiding the use of braces, will the sooner permit a development of the feeble limb.

DR. MORTON showed the following case: A boy aged fourteen, admitted to the Orthopedic Hospital, July 12, 1889. He had been operated upon for club-foot when nine months old by general tenotomy, and had used braces for several years.

Left foot: congenital equino-varus with great outward displacement and rotation of astragalus—its fibular articular process presenting subcutaneously in the central plane of the leg. Considerable atrophy. Right foot normal; three-quarters of an inch longer than the left.

On July 13th, the astragalus was excised through an incision extending in a curvilinear direction, from half an inch above the external malleolus to the base of the metatarsal bone of the third toe. The bone had to be split with cutting pliers before the calcaneo-astragaloid ligament could be divided; otherwise the operation was easy. Catgut drain and permanent antiseptic dressing. A right-angle tin splint was used.

August 11. Dressed for first time; foot in excellent position and condition; wound healed, save a very superficial ulcer.

18th. Wound entirely cicatrized.

28th. Brace was applied, and he was able to walk on the foot; no tenderness, and good ankle motion.

The next case shown, a boy aged three years, was admitted to the Orthopedic Hospital, August 21, 1889.

Right foot: congenital equino-varus, operated upon in infancy and tendons divided, but foot greatly deformed at present.

Left foot: also operated on previously, but in much worse condition, the astragalus being rotated through nearly half a circle, with its tibial articulating surface subcutaneous.

August 22. Left astragalus removed entire, without difficulty, through an incision extending in a curvilinear direction from just above the external malleolus to the base of the metatarsal bone of the third toe. Catgut drainage, permanent dressing, and right-angle tin splint. Open incision with extensive division of tendons in the right foot.

September 3. Feet dressed; right foot wound closed; left, slight superficial wound.

October 5. Left foot in excellent position. Right foot, some disposition to recurrence of varus; excision of astragalus is advised.

This third case was also a boy, aged two and a half years, who was admitted to the Orthopedic Hospital on September 26, 1889, with severe left equino-varus, the astragalus markedly rotated, and the tibial articulating surface subcutaneous; a curved incision was made from the external malleolus forward, and the astragalus removed. The wound was dressed in the usual manner, with gut drain, permanent dressing, and right-angle tin splint. There was excellent position of the foot in this case.

DR. JOHN ASHHURST, JR., said that he came to the meeting principally for the sake of seeing these cases, as he had heard Dr. Morton speak of his success with removal of the astragalus. He understood that in certain cases of relapsed club-foot, where tendons have been divided, but the after-treatment not properly carried out, it would be desirable to operate in this manner. In young patients who have not been previously operated upon he had met with no cases that could not be cured by simple tenotomy and division of the plantar fascia, with proper mechanical after-treatment. He, however, had considerable trouble with relapsed cases, and would be disposed to adopt this operation in such cases hereafter.

DR. DE FOREST WILLARD said that in the cases referred to by Dr. Ashhurst, and in large children or adults where we have hard, intractable feet with distorted bones, where the tarsal units have become wedge-shaped, where almost all the bones and tissues have become fixed, he thought that the excision of any bone which might be necessary to bring the foot into proper position was not only justifiable, but desirable. In the younger cases, however, especially under three years of age, he had never found feet which could not be brought into position with strong force after free division. He divides everything in the way, tendon, fascia, or ligament, and applies extreme force, which never produces sloughs or does any harm. Although he had torn ligaments and even a section from a bone, yet it had been nothing more than a simple fracture.

The results in these cases were, he thought, better than after the removal of a bone or a portion of the tarsus. If the astragalus is removed, we must have either anchylosis, or the calcaneum must form a new articulation with the tibia and fibula, which must be a painful process. In one of the cases shown to-night, that of the boy, the foot seemed more tender than would be found after the foot had been put in position by force.

He thought that removal of the astragalus was better than the removal of a wedge, for, in the latter case, there is usually anchylosis with stiff and rigid locomotion. In the majority of uncomplicated cases under the age of fourteen years, he believed that we are able, with manual and instrumental force, to carry the foot into position after free division. After this age it becomes exceedingly difficult and often impossible, and in many of these cases removal of the astragalus is a desirable operation, as it saves time and gives a better foot.

DR. O. H. ALLIS had not had sufficient experience with removal of the astragalus to speak of the ultimate results, but could confirm what had been said in regard to the immediate results. In a boy fourteen years of age, he worked for a year to bring the foot into good position,

but did not succeed until finally he removed the astragalus. He found that although the child had a shapely foot and did not need to wear an apparatus, yet there was no ankle motion, and the patients of Dr. Morton could not yet bring the feet to a right angle. What the condition will be six months or a year hence could not be foretold.

Dr. Morton, in closing the discussion, said that of course the operation for the removal of the astragulus is not for deformity of the anterior tarsus, but for those cases where the astragulus forms a wedge and prevents the foot from being brought into proper position. He had always been in favor of the forcible correction of club-foot when practicable, and years ago devised an instrument by which great force could be so applied. His experience was that we have had more relapses of club-foot and more unsatisfactory results than we are perhaps willing to admit. In the boy shown to-night, he did not believe that it would have been possible to bring the foot into a right-angle position without the removal of the astragalus. In regard to the boy's movement, it must be remembered that he has a more or less paralyzed atrophied limb which is much shorter than the other. A certain amount of awkward character in his walk is irremediable. He thought that the quicker we can put a distorted foot into the proper position so that the patient can plant the sole on the ground and dispense with apparatus, the better result we shall have.

Dr. J. M. Barton presented a patient showing

BONY UNION OF FRACTURED PATELLA, AFTER WIRING THE FRAGMENTS; PERFECT MOTION OF THE FOOT.

He had expected a case of fractured patella treated by the modified Malgaigne's hook, to have been presented here to-night by one of the Fellows. He had brought this patient to show the results of wiring the fragments. The patient broke her patella by muscular contraction about five months ago. Dr. Barton wired the fragments with a heavy silver wire a few days later; the wire remained in position for six weeks when it was removed. She had no symptoms except a slightly elevated temperature (from 99½° to 100°) for the first two weeks, and he feared that a low grade of inflammation was present in the joint, which might result in anchylosis, but his fears proved groundless. The limb was kept at rest in plaster for two weeks after the wire was removed, and she was then permitted to use it. The patient was shown, and it could be seen that she had now full use of the leg, walking without any limp. It was readily flexed past a right angle. The patella was as movable as its fellow of the opposite side. And as there were no inflammatory deposits around it, and its outline was well defined, there was no difficulty in deciding that firm bony union had occurred.

At the time of the operation the usual distinct veil of tissue, about one-eighth of an inch thick, was found lying over each fractured surface.

Dr. John B. Roberts said that he was inclined to think that many of these cases of supposed bony union are nothing more than exceedingly close ligamentous union. He had placed in the Mütter museum a specimen of what was supposed to be bony union after the use of the modified Malgaigne's hooks by Dr. Levis. When the specimen was fresh a little motion could be discovered between the two fragments; now when the specimen is dry, no motion can be detected. Wiring of the fragments seems to be a little more serious operation than the use of Malgaigne's hooks.

Dr. DeForest Willard said the only case of bony union after fracture of the patella that he had been able to verify, occurred in an old woman who broke the patella by direct violence. He saw her within five minutes after the accident, before there was any effusion. There was free motion between the fragments, but there had been no separation, and the fragments were at once secured with adhesive plaster and a posterior splint applied. The dressing was kept in place eight weeks. Two years later he verified the occurrence of bony union by sawing the patella. There was never any swelling or inflammation of the joint, and no pain.

Dr. Barton thought the operation by wiring was not called for in cases like that described by Dr. Willard, where the fracture is due to direct violence. In cases where the fracture is due to muscular action the tissues over the patella separate after the fracture and fall between the fragments, preventing bony union. It is this tissue that causes the ligamentous union and which stretches so much afterward. Macewen found this veil of tissue in all of his cases, and Dr. Barton's experience had been the same. In one of his cases the double layer of membrane was fully three-eighths of an inch thick. When the fragments are brought in contact with each other and wired it seems impossible for bony union not to occur. As regards the risks of the operation, Macewen has had no difficulty whatever, and in the case coming under his own observation there had been no symptoms calling for alarm. It is probable that in this case the high temperature was due to something else than the wiring.

Dr. Roberts presented the following

SIMPLE THOUGH PERFECT METHOD OF RENDERING INSTRUMENTS AND DRESSINGS ASEPTIC:

All have experienced difficulty in getting instruments and dressings absolutely aseptic, and he had always felt that unless his instruments and dressings were prepared by himself or a tried assistant, there was a probability that they were not germ-free. In order to sterilize dressings and instruments, he had made by a tinsmith an ordinary laboratory sterilizer with double walls, under which he places one or two Bunsen burners. The instruments are always kept in a tightly covered copper box which can be placed in the oven. If he gets the instruments in the box sterile by heat, he can carry it around for a week or more, as there is no tendency for dust to get into it. The handles of the knives must, of course, be of steel, or, if of wood, must be riveted to the blades. The box is placed in the oven and the temperature run up to 130° C. This is shown by the thermometer passing through the top of the open. He usually allows the instruments to remain in the sterilizer about two hours, though the temperature is not at 130° all of that time.

We know that moist heat is a better sterilizer than dry heat, but the objection is that subsequently one has to dry the instruments and thus run the risk of contamination. The instruments might be placed in the dry-oven after being in the steam, but this would complicate matters. If the temperature of his oven runs above 130° C. or 145°. C., the steel instruments become oxi-

dized, some becoming blue, some yellow, and some quite brown. Nickel instruments, however, are not affected at this temperature. He keeps the thermometer bulb about the middle of the oven, where he had found that the temperature is about ten degrees lower than at the bottom, so that if the thermometer indicates a temperature of 120° to 125° C., it was certain that it was about 130° to 135° C. at the bottom shelf This temperature will scarcely scorch the dressings, but it does not do to go higher than this. All germs except that of anthrax are destroyed at a temperature lower than 130° C., and the bacillus anthracis is destroyed at this temperature. The staphylococci and the streptococci are destroyed at a lower temperature.

DR. J. EWING MEARS presented the following case of

RADICAL CURE OF HERNIA:

One year ago he presented to the Academy a patient on whom he had performed the operation for the radical cure of hernia. The operation was done in June, 1888, sixteen months ago. He again presented the patient at the expiration of this time in order that the Fellows might examine him and determine the result of the operation, in which there was no sign of a return of the hernia, although the man has been steadily working in a woollen mill where he is obliged to lift heavy bales. This was a case of entero-epiplocele. He opened the sac, divided the stricture, returned the gut, excised the omentum, returned the stump to the abdomen, then tied the neck of the sac with a double ligature and cut between. The proximal portion was twisted and secured in the internal ring with a long pin. The distal portion of the sac was sutured and allowed to remain, as it was found that the hernia was congenital, and by this plan a tunica vaginalis was formed

He also reported this evening another case of entero-epiplocele on which he had operated three weeks ago. In this case the operation was performed in the same manner as in the one above reported, except that the distal portion of the sac was removed. It was an inguinal hernia of some years' duration in a woman. The omentum had become so much changed that it was difficult to recognize, and the sac was one-quarter of an inch in thickness. The omentum was ligatured in sections and removed, the stump being returned to the abdomen. The patient came into the hospital after prolonged taxis had been employed.

Adjourned.

CORRESPONDENCE.

RHUS TOXICODENDRON.

To the Editor of THE MEDICAL NEWS,

SIR: There appeared in the issue of this journal for April 20th a short communication from me upon the use of rhus toxicodendron in rheumatic affections, in which I mentioned the beneficial effects obtained in sciatica, lumbago, muscular and joint affections, and in varicose veins. In that letter I inadvertently omitted giving information in regard to the dose of the drug or the special preparation that I had used, and in consequence of this omission a number of gentlemen have written for information upon these points. The preparation I have referred to further on in this memorandum; but here I wish particularly to speak of the dose. My observations thus far have been confined to the exhibition of the drug in doses not exceeding one-half drop of the tincture made from the fresh leaves according to the formula of the *Pharmacopœia*, and for convenience I have this prepared in the form of a solution with dilute alcohol, in the strength of one part of the drug to ten parts of the solution, so that five drops of the solution contain one-half drop of the tincture. This is to be taken three times daily.

Since that time I have published accounts from different observers (*Therapeutic Gazette*, October, 1889), and the following note from Dr. Everett is offered with a view of confirming the statements I advanced last April:

Dr. J. O. Everett, of Edington, Illinois, under date of August 21, 1889, writes: "I have taken the rhus four times a day for two months. First the tincture you sent me; then the fluid extract. . . . . It has helped me, but I am not yet entirely well. I have had sciatica nine months; have taken nearly every thing we give, with but little, if any effect, until I began with the rhus. I shall continue taking it for some time. I have given it in two other cases of sciatica, in which it worked splendidly. One case took it only four days, the other one week, and so far they have had no return of the disease. I gave it to seven cases of muscular rheumatism, in each of which it acted very satisfactorily, and a case of lumbago and one of torticollis were each quickly relieved.

Again, under date of September 29, 1889, he writes, asking me to send him some of the fresh tincture, as he is unable to procure it. He says: "Out of several lots I have used I have been disappointed in its effect:" and adds, "I am pleased to say that I am feeling much better. It has now been over one month since I have felt anything of my old trouble, sciatica."

Referring to my correspondence with Dr. Everett, I wish to say that on the receipt of his communication in the latter part of August, I wrote him to the effect that I was inclined to the opinion that the preparation he had been using was faulty, and accordingly I forwarded to his address a supply of what the importers, Messrs. Parke, Davis & Co., call the *German tincture*, which, I believe, is prepared according to the formula of the *United States Pharmacopœia* for the making of tinctures of fresh herbs—the maximum dose that I have used being one-half drop three times daily. My impression was thus confirmed that the tincture of the fresh plant was far superior to any and all other preparations, because as soon as he began taking this product his sciatica was relieved. Another evidence that this is the true interpretation may be inferred from the fact that he says in his first communication nothing afforded any relief until he began taking the tincture that I first sent him, along with the directions for its use. Whether this is assuming too much I submit to the judgment of the reader, and should like to have the matter tested by other observers besides myself, as I have shown that it is a drug of no small importance, and also that it can be used with safety.

JOHN AULDE, M.D.

4719 FRANKFORD AVENUE, PHILADELPHIA.

ANN ARBOR, MICHIGAN.

(From our Special Correspondent.)

To the Editor of THE MEDICAL NEWS,

SIR: Notwithstanding the great changes in the Faculty of Medicine in the University of Michigan, and the attempt which was made by one of the retiring instructors to induce the old students to go elsewhere to complete their studies, the department has more students than it had last year.

The fearful mortality which has followed the operation of ovariotomy in our hospital for the past two years promises not to be repeated this year. Prof. Nancrede has operated upon two very difficult cases, before the class, and both are recovering nicely.

The Regents have purchased twelve acres of land, and will begin immediately the erection of a new hospital, for which $75,000 have been appropriated. The site is a commanding one, overlooking the river, and the patients will not be compelled to complain of lack of air or of unsanitary surroundings.

The chemical laboratory, which already contains more than three hundred work tables, is being treated to an extensive addition. All the laboratories are filled to the utmost. Freshmen students are required to spend the afternoons of three months each in the anatomical, histological, and chemical laboratories. During the junior year, afternoons are employed in the laboratories of physiology, physiological chemistry, pathology, and hygiene. The afternoons of the senior year are devoted to hospital work. Many of the students approve of the proposed four years' course.

NEWS ITEMS.

The Johns Hopkins Hospital Bulletin.—The Trustees of the Johns Hopkins Hospital have authorized the issue of a publication to be known as the *Hospital Bulletin*. It will contain announcements of courses of lectures, programmes of clinical and pathological study, details of hospital and dispensary practice, abstracts of papers and other proceedings of the Medical Society of the Hospital, reports of lectures and all other matters of general interest in connection with the work of the Hospital. Nine numbers will be issued annually. The first number will appear in November, 1889. The subscription price will be one dollar per year, and subscriptions may be sent to the Publication Agency of the Johns Hopkins University, Baltimore, Md.

A Professorship Endowed.—It is stated that Peter Graff, of Worthington, has announced the gift of $25,000 out of the estate of his son, Charles H. Graff, M.D., who died recently in Duluth, Minn., to endow a professorship in Pennsylvania College at Gettysburg, to be known as "The Dr. Charles H. Graff Professorship of Hygiene and Physical Culture." Dr. George D. Staley, of Lebanon, formerly of Harrisburg, has been chosen to fill the Chair.

Reception to Dr. Rihl.—On Tuesday evening, October 29th, at the Colonnade Hotel, a reception and banquet were tendered to Dr. Henry W. Rihl, upon his return from Europe, by members of the Northern Medical Association and other professional friends. The following gentlemen were present: Drs. Hulshizer, Fischer, Pepper, Da Costa, Mitchell, Longaker, McBride, Nightingale, J. L. Rihl, Q. P. Kellar, Shriner, McDowell, Dieterich, Hornor, Gibb, Collins, Hess, J. S. Walker, Knorr, Vogler, Bochroch, Bissey, Ott, Strittmatter, Maylau, Oliver, Strobel, Rohle, Stern, Teller, Bobb, Beates, Horn, Gaus, Steinbach, Taylor, Updegrove, Hohnes, Deaner, Mills, J. B. Walker, Love, Roberts.

The Southern Surgical and Gynecological Association holds its session at Nashville, Tenn., November 12, 13, and 14, 1889, and has issued a preliminary programme. The meeting promises to be a large and successful one. About forty papers by eminent members of the Southern profession are already on the list.

Johnstown Health Bulletin.—In issuing this, its last bulletin, in reference to the health of Johnstown and the Conemaugh Valley, as affected by the great flood, the State Board of Health has its most serious obligation yet to perform—that of urging upon the people in the most emphatic manner the necessity and the duty of becoming themselves the protectors of the public health. If the success which has attended the efforts of the Board to prevent the occurrence of a pestilence such as has invariably followed like disasters in the past, has impressed upon their minds this lesson: that accumulations of decomposing animal and vegetable matter near human habitations are always dangerous and never to be tolerated, and that in thickly settled regions the only way to avoid such accumulations is by the creation of specially constituted authorities charged with the duty of their prevention and removal, clothed with full power and provided with sufficient means to enforce their own regulations—the direct and immediate benefits which its presence here has conferred will be trifling compared with the far-reaching good which will have been thus indirectly accomplished. If, on the other hand, the assistance rendered by the State has unfortunately been to lessen the self-reliance of the citizens, leading them to look outside for the performance of a function of self-government which belongs rightly to themselves alone, then the greatest work ever undertaken by a State Board of Health will have been prosecuted in this valley with results which will be far from an unmixed good. If the simple precautions which the Board has been exercising in the matters of sanitary inspection, disinfection, and the removal of garbage are at once dropped, the Board will not hold itself responsible for the consequences. The municipal authorities of all the boroughs lying along the Conemaugh and Stony Creek rivers should unite in constituting a Board of Health, to which should be confided the protection of the health of the entire district. The organization of this Board should be on the plan authorized by the Legislature for cities of the third class. It should consist of five of the most intelligent and reliable citizens, appointed without reference to locality or political preference, whose term of service should be limited only by their failure to perform properly the duties of the position. Such a Board, adopting the model ordinance of the State Board of Health as its code, and faithfully executing its provisions, would speedily become a pattern for all sanitary organizations throughout the Commonwealth.

The Board feels that it may well congratulate the citi-

zens on the standard of health which has been maintained during the trying period in the face of so many adverse influences. Their cheerful acquiescence in the decisions of the Board, which must often have appeared to them onerous, and their brave and resolute temper, have had a considerable share in conducing to this result.

BENJAMIN LEE, M.D.,
Secretary State Board of Health
of the Commonwealth of Pennsylvania

JOHNSTOWN, Oct. 12, 1889

Nashville Prison Congress.—The Annual Congress of the National Prison Association of the United States will convene in the Senate Chamber of the Capitol at Nashville, Tennessee, at 10 A. M., Saturday, November 16th, and will continue its sessions until the evening of Wednesday, November 20th.

The objects of this Association, as defined in its constitution, are: (1) The amelioration of the laws in relation to public offences and offenders, and of the mode of procedure by which such laws are enforced; (2) The improvement of the penal, correctional, and reformatory institutions throughout the country, and the government, management, and discipline thereof, including the appointment of boards of control and other officers; (3) The care of providing suitable and remunerative employment for discharged prisoners, especially such as may or shall have given evidence of a reformation of life.

THE thirteenth annual session of the American Academy of Medicine will meet at Leland's Hotel, Chicago, Ill, on Wednesday and Thursday, November 13 and 14, 1889.

THE Vienna *Weekly News* gives the following additional information regarding the Anglo-American Vienna Medical Association, to the initial movements of which attention was called last week. Such an organization would be a great aid if established in Berlin, Leipzig, and similar continental cities. A meeting of British and American physicians was held at No. 12 Landesgerichts Strasse, to consider the question of establishing an association for the purpose of furnishing all needed information to English-speaking medical men coming to study in Vienna. A large proportion of those now in the city were present. After a lengthy discussion, it was resolved to start such an association, under the title of "The Anglo-American Vienna Medical Association." A committee of management was appointed, with five members, representing different branches of medical study. *Their chief duty will be to supply information to new-comers, on their arrival, as to matriculation, medical courses, lodgings, etc.*, and, when necessary, to call meetings of the Association. The committee, on the occurrence of vacancies in their number, through members leaving Vienna, will fill these up as soon as possible. The office of the Association will be at No. 12 Landesgerichts Strasse, a few minutes' walk from the General Hospital. It was agreed that membership should be open to any British or American physician or medical student, on payment of an entrance fee of one gulden. The application to the authorities, necessary according to Austrian law, for permission to establish such a society has been made, and the committee expect that toward the end of October the Association will be in working order. Meanwhile, *letters of inquiry addressed to the President or Secretary will at once receive attention.*

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 29 TO NOVEMBER 4, 1889.

By direction of the Secretary of War, so much of Par. 2, S. O. 241, October 16, 1889, from this office, as relates to Anthony Heger, Lieutenant-Colonel and Surgeon, is amended to read as follows:

ANTHONY HEGER, *Lieutenant-Colonel and Surgeon.*—Is relieved from further duty in the Division of the Atlantic, and will report at once to the Major-General commanding the Army, for duty in this city.—Par. 5, *S. O. 252, Headquarters of the Army, A. G. O.*, October 29, 1889.

By direction of the Secretary of War, Par. 3, S. O. 241, October 16, 1889, from this office, is so amended as to grant ROBERT M. O'REILLY, *Major and Surgeon*, leave of absence for six months, with permission to leave the United States, to take effect November 1, 1889.—Par. 6, *S. O. 252, A. G. O., Washington, D. C.*, October 29, 1889.

TAYLOR, MORSE K., *Major and Surgeon* (retired).—Died, October 20, 1889, at San Antonio, Texas.

War Department, Washington, October 30, 1889. By direction of the President, WILLIAM H. FORWOOD, *Major and Surgeon*, is detailed as a member of the Army Retiring Board at St. Paul, Minnesota, convened by War Department Order dated January 12, 1889, published in S. O. No. 10, January 12, from Headquarters of the Army, vice Edgar A. Mearns, Captain and Assistant Surgeon, hereby relieved.—Par. 12, *S. O. 254, A. G. O.*, October 31, 1889.

By direction of the Secretary of War, WILLIAM C. GORGAS, *Captain and Assistant Surgeon*, is relieved from temporary field duty in the Department of the Missouri, and will join his proper station (Fort Barrancas, Florida).—Par. 2, *S. O. 251, A. G. O.*, October 28, 1889.

Appointments in the Medical Department, U. S. Army, as Assistant Surgeons, to rank from October 29, 1889: *First Lieutenant* CHARLES WILLCOX, *First Lieutenant* HARLAN E. MCVAY, and *First Lieutenant* E. B. FRICK.

By direction of the President, the Army Retiring Board convoked at Vancouver Barracks, Washington Territory, by War Department Order dated December 15, 1888, published in S. O. No. 292, December 15, 1888, from Headquarters of the Army, is dissolved.—Par. 1, *S. O. 250, A. G. O., Washington*, October 26, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING NOVEMBER 2, 1889.

NASH, F. S., *Passed Assistant Surgeon.*—Detached from duty in the Bureau of Medicine and Surgery, and ordered to the "Petrel," November 14, 1889.

BOGERT, E. S., *Medical Inspector.*—Ordered to examination preliminary to promotion to Medical Director.

NORTON, O. D., *Assistant Surgeon.*—Ordered to examination preliminary to promotion to Passed Assistant Surgeon.

KITE, I W., *Assistant Surgeon.*—Ordered to examination preliminary to promotion to Passed Assistant Surgeon.

STONE, E. P., *Assistant Surgeon.*—Ordered to examination preliminary to promotion to Passed Assistant Surgeon.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, NOVEMBER 16, 1889. NO. 20.

ORIGINAL LECTURES.

INSULAR SCLEROSIS OF THE BRAIN.

A Clinical Lecture
Delivered at the Rush Medical College, Chicago, Ill.

BY HENRY M. LYMAN, M.D.,
PROFESSOR OF PHYSIOLOGY AND DISEASES OF THE NERVOUS SYSTEM.

GENTLEMEN: This man, who was before the Clinic on a previous occasion, is thirty-four years of age, a canvasser by occupation, and says that in November last he had a "stroke," and since has been unable to walk well. He has had no previous illness so far as we are able to ascertain. The attack came on while he was sitting in a chair at home, though he states that he had a peculiar nervous feeling shortly before. For fifteen minutes after the stroke he could not speak and had a cramp in both hands, but did not fall or lose consciousness. At the end of fifteen minutes he was able to speak a little. The trouble has been growing worse. The reflexes are normal, heart sounds normal, vision good, but the right arm is getting weaker, and in it he has numb feelings which last for half an hour at a time.

After questioning a little further, we learn that he has been engaged in the canvassing business for several years, and in the course of that time he suffered a good deal from exposure to the sun; and that he has taken a glass of beer with his supper for the last ten years. He has had no venereal disease, but suffered with rheumatism before this stroke.

It is important to establish these facts in order to ascertain if there is a predisposition toward constitutional diseases. In the case of patients suffering from syphilis, there is a predisposition to syphilitic disease involving the arteries of the brain, so that in such patients rupture of a bloodvessel is common. Rheumatism frequently predisposes to cerebral difficulties in the way I indicated when speaking of chorea on a former occasion. As a consequence of endocarditis, vegetations form upon the edges of the valves of the heart; minute fragments may be broken off and washed into the circulation, and we may have obstruction to the bloodvessels in a certain territory of the brain, which produces the symptoms of a stroke. A favorite locality for this plugging of the vessels is the Sylvian artery, which lies in the fissure of Sylvius and which gives off branches right and left to that portion of the brain cortex forming the *motor zone*. Now, when we get a plugging of the vessels and an arrest of the circulation, there is enfeeblement of all the functions of that part of the brain.

This patient tells us that it was the right side that was weakened, therefore, as the left motor zone is in direct communication with the right side of the body, it was upon the left side that the disease occurred. The fact that he did not lose consciousness at the time of the attack indicates that the lesion is not very extensive. We have not as yet made any investigation as to whether it was a rupture or a plugging of the artery. The effects, so far as the functions of the brain are concerned, are similar. If there be rupture of one of the twigs connected with the Sylvian artery, there will be an escape of blood and compression of the brain substance in that neighborhood. If there is a plugging of the artery, the blood-supply is shut off, and the final result of this stoppage is also arrested functional activity.

It is a singular fact that when the left side of the brain in the region of the Sylvian artery is thus affected, the power of speech is interfered with. When, on the other hand, the right side of the brain is affected, there is no loss of speech, but paralysis of the limbs. I will not stop to tell you how this loss of speech may be produced by lesions of the brain, but there are other portions of the brain which may be affected in such a way as to destroy the power of speech.

We will ask the patient to hold a glass of water with his hand, and you notice that he cannot do so steadily; yet there is not so much agitation of the hand as there is sometimes in the case of tumors of the brain. The left hand is much steadier than the right.

I will now ask him to write the words, "Rush Medical College." The reason I ask him to write an unfamiliar sentence is, that if I were to give him a familiar one he would write it more or less automatically. You will observe that there is an irregular, angular character to all the strokes of the pencil, that instead of being regular and well formed, they are of characteristic inequality. You will often see this tremor in old age, for many persons, as they advance in years, suffer from atrophy of the brain, which causes tremulous hands, so that the lines or characters which they make with pen or pencil are characterized by the same irregularity and inequality which we observe in this patient.

The use of narcotic poisons, such as tobacco, will produce it, and sometimes excessive venery. Loss of sleep, which produces great exhaustion of the brain, especially in persons advancing in years, will often be followed by the appearance of tremor; but the most serious cause of it is disease of the brain substance itself, either a sclerosis in disseminated patches or injury to the brain substance, here and there, consequent upon disease of the cerebral bloodvessels. I think that this is the case here.

When sclerotic disease invades the brain, there is, furthermore, a tendency to the manifestation of occasional paroxysms of paresis, partial loss of consciousness, and perhaps epileptiform attacks, which are multiple in their development. Sometimes the patient becomes completely paralyzed and comatose, but in two or three days' time recovers the power of locomotion and is able to walk again; speech and consciousness reappear, but the diseased condition returns after a time. Such a condition is not infrequent in cases of chronic inflammation of the cortex, which constitutes the foundation of paretic dementia; and you see it, moreover, in the case of chronic dis-

ease of the bloodvessels, as we have here. When there is this tendency to chronic sclerosis and to arterio-sclerosis, not only do we have this tremor, but there is also disturbance of speech when the patient has recovered. There is an irregular utterance, and instead of speaking out smoothly with a continuous flow of sounds, the words are uttered in a broken manner. Let me direct your attention to the articulation of this patient. It is with apparent difficulty that he utters the word *institution*. In asking him where he resides, you notice that he replies, "Eight-een Ev-ans Cou-rt," instead of speaking out clearly, "Eighteen Evans Court." He utters each syllable with a special effort in an unnatural and artificial way. This is consequent upon the lack of equable and continuous flow of energy from the brain. In order to make this intelligible, you must think of the efforts that are evolved from the healthy brain in the movement of the muscles during articulation, the disordered brain preventing that easy and continuous flow of sounds or words necessary for fluent speech. In this case we have a conspicuous illustration of the fact. There was a sclerotic disease going on in the brain before it was recognized, on the occurrence of one of the paroxysms of which I have spoken. These paroxysms are liable to occur from time to time during the course of the disease. The patient now shows the consequences of a confirmed and fully developed disease in the brain and its bloodvessels. There is only partial paralysis of the muscles on the right side, the difference being more conspicuous in the hands than in the legs.

Let us try the condition of the reflexes. There is spastic rigidity of the muscles on the right side; they are not under the control of the will. The degeneration in the motor zone of the brain reaches down to the pyramidal tract of the lateral column of the cord, and the muscles are at times thrown into a state of rigid contraction. Here there is constant rigidity kept up by the irritation in the lateral columns of the spinal cord.

You notice, too, that when he puts his tongue out it is impossible for him to do so without trembling. The tongue varies its position in consequence of his inability to control the action of the muscles that are concerned in the disorder.

The patient says that the paralysis is not increasing as time goes on, but that his hands become more unsteady, which is due to the fact that the sclerotic process continues to spread in the brain, and constantly involves larger areas.

If this trouble had been plugging of an artery, there would have been a preëxisting inflammation in the heart, with valvular lesions, which, on auscultation, we find is not the case; consequently this is one of those cases in which the disease originated in the brain and had been going on for a considerable length of time before attention was directed to it.

The treatment in such a case is not very encouraging. The disease depends upon a sclerotic process that is permanent, and which is liable to extend, rather than diminish. Still we should not neglect the patient. We should give him the best opportunities and treatment that are accessible; and in those cases of long-continued chronic changes in the brain substance, where we cannot hope for complete restoration, we sometimes see marked improvement from the use of mercury in small doses. My favorite prescription for such cases is the biniodide of mercury, given in doses of about the twenty-fifth of a grain three times a day. This may be given for months without any danger of salivation or injury to the patient, and frequently with considerable improvement in the general condition. The iodide of potassium does not seem to be as efficient as the biniodide of mercury given in this long-continued and patient manner. After all, it is doubtful whether you will ever see such a case cured.

ORIGINAL ARTICLES.

CONGENITAL DISLOCATIONS OF THE HIP.[1]

BY CHARLES SETH EVANS, B.S., M.D.

As time has gone by, certain facts of a clinical and general nature have been tolerably well established in regard to congenital dislocations of the hip. These are:

1. The malformation most commonly affects each hip, in the proportion of three or four to one.

2. It is much more frequent in the female than the male sex.

3. The most usual form of dislocation is upward and backward on the dorsum ilii, though other dislocations do occur, such as directly upward, upward and forward upon the pubes, or into the sacro-sciatic notch.

4. The affection is distinctly hereditary.

5. Many cases are associated with other deformities, such as congenital dislocations of other joints, but more especially with malformations due to a lack of development, or a failure of one of the body cavities to close—such as spina bifida, ectopia vesicæ, and meningo-encephalocele.

6. The deformity is first noticed when the child begins to walk.

The clinical history of a case of congenital dislocation of the hip, briefly stated, is generally as follows: The child, after a normal birth, seems perfectly well, and nothing is noticed until it makes its first attempts at walking; this it does rather later than other children. The limping gait, in the rare unilateral dislocations, due to the shortening of the affected extremity, or the waddling movements, like a duck, in the double dislocations, call attention to the hip-joints.

The waddling gait is caused by the body, which is, as Volkmann points out, swung between the femurs like an old-fashioned stage coach on its leather springs, being alternately thrown from side to side so as to place its weight upon the limb which is not to be moved in making the next step.

As the patient increases in age the gait grows worse up to, if not after, puberty. The condition, as a rule, is not painful.

The deformity is quite characteristic. The patients

[1] Read before the Southwestern Ohio Medical Society, Cincinnati, October 9, 1889.

have a peculiar squatty figure, the body appearing longer than normal, while the legs seem shorter and more puny. The body looks as if it had fallen down between the thighs until the umbilicus is on a level with the iliac crest. A marked lordosis and a corresponding prominence of the belly are present. The pelvis is much more oblique than normal; the hips are raised, while in the neighborhood of the posterior superior spinous processes of the iliac bones. the ends of the femurs may be seen as rounded prominences. The gluteal folds are not obliterated, but raised upward and outward. In a recumbent position many of these changes are modified: The lordosis and projecting belly disappear more or less completely, according to the age of the patient, and the prominence of the great trochanters grows less.

If moderate traction is made upon the legs, certain further changes may, or may not, occur, for in a not inconsiderable number of cases the legs can be drawn down until the heads of the femurs occupy, more or less approximately, positions opposite to those of the acetabuli, when, of course, the deformity ceases to be manifested. In other cases the femurs are fixed in their abnormal positions and traction produces no effect.

An examination of the hip region shows that the rounded prominences are due to the great trochanters, and, at times, reveals the femur heads lying in the vicinity.

On constructing the Roser-Nélaton line the trochanters are found to lie more or less above it. Motion, active or passive, is generally free and painless, and when limited, it is most apt to be in the directions of abduction and rotation.

As a rule, two of the cardinal symptoms of a traumatic luxation are absent: adduction and internal rotation.

The deformity is a progressive one. The gait becomes more and more striking, and is always more noticeable in walking than in running or dancing. The disproportion between the body and legs increases as the child uses its limbs, for it is only in extremely rare cases that a strong nearthrosis is formed.

Pathology.—Here two very distinct and separate classes of cases must be considered:

A. Those which have walked.

B. Those which have never walked.

The pathological changes may be classified thus:

1. Changes in the position of the femur head.
2. Changes in the component parts of the joint.
3. Changes in the tissues in abnormal relation with the head of the femur.
4. Changes in the muscles inserted round the hip-joint.

We shall first consider the pathological changes in the class of cases which *have walked*, more especially the *changes in the position of the head of the femur*.

As I have already stated, in the vast majority of cases of this class, the head of the femur is found dislocated upon the dorsum ilii, and resting either upon the gluteus minimus or upon the iliac bone itself.

The *changes in the component parts of the joint* consist in those occurring in *the capsule*, which is usually entire, but may be wanting opposite the head of the femur, under which circumstance its absence is best explained as due to an atrophy from pressure. The capsule is elongated, stretching around the cotyloid cavity to envelop the head in its abnormal position.[1] It is much thickened and very fibrinous, especially in that part representing the Y-ligament,[2] and is quite frequently attached to the fascia of the gluteal muscles,[3] and not infrequently has an hour-glass form,[4] rendering an apposition of the head of the femur and the acetabulum impossible.[5] More or less movement of the head of the bone within the capsule is the rule.

The synovial surface of the capsule is usually polished and of normal appearance, while attachments to the more or less imperfect round ligament are common, as are also attachments to the acetabular ring, over which the capsule is stretched, as well as to the head and neck of the femur.

The synovia varies in amount, in some cases being normal, in others excessive, although one would expect an enlarged capsular cavity and more synovia than in a normal joint.

The condition of the *ligamentum teres* varies extremely. In some cases it is found not only elongated, which, if the ligament exists in its entirety, must be the case, but also thickened, ribbon-like, and on the stretch, pointing to the fact that it had played an important *rôle* in carrying the weight of the body.[6] Or, again, the ligament, though entire, is more or less attached to the capsule.[7] In opposition to this condition the round ligament has been found entirely wanting,[8] or may be represented by a band no thicker than a thread, which is often incomplete or of abnormal origin, arising by two heads from the acetabulum or from the cotyloid ligament.[9]

The neck is usually shorter than normal, and has a direction more horizontal to the axis of the femur.

---

[1] Holmes-Coote: Lancet, 1860.

[2] Carnochan: New York Journal of Medicine, 1848. Berend: British Medical Journal, 1861.

[3] Canton: London Medical Gazette, xli.

[4] Birnbaum: Wien. med. Presse, 1859.

[5] Bouvier: Bull. de l'Acad. Royal de Méd., 1838–39.

[6] Holmes-Coote, Adams: Todd's Ency., vol. ii. Adams, Mercer: Journ. Edbg. Phy. Soc., 1853. Bouvier, Paris: Arch. gén. Méd., xiv. p. 439. Breschet: L. M. and S. Journal, 1835.

[7] Bouvier. [8] Heine, of Constadt Canton.

[9] Adams, of Dublin.

The head, in the reported dissections, varies from normal to entire absence, its place being then taken by a smooth and flattened place upon the trochanters.

The *acetabulum* has never been found normal, but in no case entirely absent. Certain changes are the most constant—such as:

Smaller than normal, and perhaps too small to receive the head of the corresponding femur.

The normal round and semispherical form may be changed into a flattened oval.

Hypertrophy of the acetabular fat, or "glands of Havers," which is a very common condition.

The cartilaginous cotyloid rim is often wanting.

As has been mentioned, the capsule is at times, though rarely, perforated by the head of the femur, and abnormal attachments of the capsule to the fasciæ are common. The head is not infrequently found buried in the gluteus minimus. As a rule, very few or no signs of inflammatory reaction or the formation of a new joint are present.

The *muscles around the hip-joint* are affected in two ways: First, by the alteration in position of the points of insertion—hence the course of the Gemelli and obturator inferior around the neck of the femur, and the contracture of the gluteal muscles; second, atrophy and pallor, induced as an effect of non-use or of pressure made by the displaced head of the femur.

In *incomplete dislocations* the above-mentioned changes in and around the hip-joint are modified by the position of the head upon the rim of the acetabulum. Certainly the majority of these changes are due to simple mechanical causes, and no one should hope that a theory, however ingenious, built upon such changes, and having for its object the explanation of the nature and cause of the congenital dislocations of the hip, could command the serious attention of any one possessed of a mind in the slightest degree logical.

We shall next consider those cases which have never walked.

Here the number of authentic dissections is indeed few—fewer than the theories which have been advanced for their explanation. And of these few, quite a number are cases in which the dislocation of the hips was but one of a number of malformations.

Mr. Mercer Adams[1] reports the dissection of a double dislocation in a fœtus, otherwise much deformed: The acetabulum was irregular, but well formed. The head of the femur lay upon the dorsum ilii, where it had formed for itself a new cartilaginous acetabulum. The axis of the neck of the femur was nearly horizontal, the capsule lax, and ligamentum teres longer, thicker, and stronger than is common in fœtal life. The thigh and gluteal muscles were much atrophied and contracted. Adams believed the cause of the luxations to be contracture of the muscles. It is worthy of note that in this *fœtus* a new cartilaginous acetabulum should have been formed when a nearthrosis is so rare even in cases which have walked.

Parise is quoted by Adams as reporting the case of a child ten weeks old, in which the ligamentum teres was elongated and on the stretch.

Dollinger[1] dissected a fœtus with failure of union of the symphysis pubis and ectopia vesicæ, and found that the acetabulum was so small and altered that the femur head could not be replaced.

Grawitz[2] reports the following seven cases:

CASE I.—Male fœtus of eight months' gestation, much deformed. Pelvis small, thin, and delicate. Double dislocation of the hips. Acetabuli correspond in size to those of a five-months' fœtus, and are irregularly oval. The Y-shaped cartilage of the acetabulum is decidedly larger than normal, at the expense of the three pelvic bones, which have been retarded in their ossification. The anatomical evidence of this delayed bone formation is found in the microscopical examination of sections from the Y-cartilage. The area of proliferation of the cartilage cells is much narrower than normal, and the formation of these cells into columns is but poorly represented. Head of femur smaller than normal, yet much too large for the intended acetabulum. The shoulder-joints are in about the same condition; both are subluxated, and in both the glenoid cavities are very small.

CASE II.—Pelvic bones are thin and delicate, but about normal in size. Double dislocation of the hips, upward and backward. Acetabuli present; in size, those of a fœtus several months younger. Again the anatomical evidence of delayed ossification of the pelvic bones is found in the Y-shaped cartilage; slight proliferation of the cells, and failure to form columns. Head of the femur also delayed in its development, yet too large for the acetabulum. Child born at term; died twenty-one days later, of spina bifida.

CASE III.—Delay of ossification and the same microscopical changes as above, were found both in acetabulum and in femur head. Head too large for the socket. Changes most marked in the acetabulum.

CASES IV. AND V.—Double dislocations. Femurs cannot be replaced in the acetabuli. Heads about normal. Y-shaped cartilages of the acetabuli show not only the lack of proliferation of the cells, but also a degeneration of the same, as indicated by their spindle form.

The two following cases, though they belong here, are mainly interesting in the question of etiology:

CASE VI.—Much-deformed infant, with both acetabuli small. Right femur is luxated upward and backward; left femur in its proper place. On the right side ossification of the acetabulum and growth of the same were delayed, and changes in the cartilage were discernible with the microscope. The head of the femur is too large for its acetabulum. On the left side the microscopical examination shows that both the socket and the head have been delayed in ossification, though they still fit one another.

CASE VII.—Much-deformed infant. Left hip normal. Right hip dislocated upward and backward. Microscopical examination of the left side gave the normal picture of growth of bone from cartilage. On the right side, the

[1] Loc. cit.

[1] Virchow's Archiv. [2] Arch. path. Anat., vol. lxxiv.

acetabulum small, and the main change found in the ordination of the cells of the Y-shaped cartilage, and especially in that part of the same which is made up from the pubic and ischiatic bones, and not, as in the other cases, in the part supplied by the ileum.

The etiology is, perhaps, the most interesting chapter in the whole subject, and has been only too assiduously studied, if one may judge from the number, variety, and variance of the theories which have now and again been advanced to make plain the why and wherefore of this affection.

Certain etiological factors are shared by dislocation of the hips with other congenital malformations. It is hereditary, and it occurs most frequently in the female sex. With these two settled, others have been added *ad libitum*—of which may be mentioned: injuries and fright during gestation; accidents during childbirth; diseases of the hip-joint *in utero;* an inherent defect of the germ; and, finally, rheumatism, that all-potent disease, as if, says Dollinger, the fœtus had caught cold in its bath of liquor amnii.

A short review of the theories which from time to time have been suggested, is necessary.

Hypocrates and the older writers were of the opinion that these luxations were due to injuries; that is, to force, either acting suddenly, as in blows, or slowly, in the form of a preternatural smallness of the uterus.

By some it was supposed that the luxation of the femurs occurred in breech presentations from traction, or the use of the blunt hook. These occur, but are traumatic luxations, and not congenital in the true sense.

Dupuytren and others considered the congenital hip dislocations to be due to an inherent weakness or disturbance of the germ, an aberration of the "autotrophy," or power of self-development inherent in the fœtus.

Other theories are: Defective development of the acetabulum, advanced by Breschet, and advocated by Cruveilhier, Sayer, Dollinger, and Grawitz.

Morbus coxarius, advocated by Morell, L'Avallée, and Guérin. A very rare disease in fœtal life.

Hydrarthrosis, to prove which, as the true cause, Parise's paper was written.

Hypertrophy of the "Haversian glands," which is a *post hoc ergo propter hoc* argument.

Muscular contraction was advocated by Adams, Guérin, Melicher, and Carnochan.

The theory of *nervous influence* was advanced by Carnochan, who says that "the luxations result from some active morbid muscular contraction; this contraction is to be traced to a morbid condition of the central ganglionic mass of the cord."

To these theories two more must be added, not because they have especial claims for veracity, but rather because of those who have advanced them.

Hueter believed that in the development of the luxated hips, the head of the femur and the acetabulum were not developed opposite one another; forgetting that embryologically they both are formed by a splitting of one piece of cartilage.

Roser thinks that an extreme adduction of the thighs in the fœtus *in utero* will explain the luxation, and also why the female sex is the one usually affected; the male genitals, according to his idea, being too sensitive to pressure to allow of their development with the thighs, in their position of adduction, pressing upon the genital region.

Of these theories perhaps only one is really worthy of serious consideration, for it alone rests upon a basis of proven anatomical facts. The theory referred to is that of a mal-development of the acetabulum, advanced by Breschet, and put upon a scientific footing by Grawitz. The latter reminds us that the Y-shaped cartilage of the acetabulum rarely represents the epiphyseal line of the pelvic bones which meet and conjointly form the acetabulum; that the growth and development of the acetabulum and pelvic bones are dependent upon certain formative changes in this cartilage, as is the growth of every other bone dependent upon the changes in its epiphyseal cartilage.

Grawitz examined five cases of congenital dislocation of both femora in children who had not walked, and found that the acetabuli did not correspond in development to the age of the child, and also certain changes in the acetabular Y-shaped cartilage; changes which have not been elsewhere noticed, and which pointed indisputably to a lack of formative development in this structure. The heads of the femora were by no means always found in a normal and healthy condition, but they were larger than the corresponding acetabuli, and their cartilages showed much less sign of disturbed proliferation. And to combat what would probably have been the first and greatest objection urged against his theory—that he had confounded cause and effect, *i. e.*, that the changes in the Y-shaped acetabular cartilage were only secondary, and caused by the absence of the head of the femur from the acetabulum—Grawitz reports two other cases, in one of which the right femur was luxated, but the left in place. Both acetabuli were small for the age of the infant, and both presented the signs of delayed ossification; but on the right side the head of the femur was too large for its socket, while on the left, the head and socket fitted together perfectly. On microscopical examination of these two heads, the cause for the small size of the left was found in the marked evidence of change in its cartilage, while on the right side these changes were much less pronounced. The other case is one of single, unilateral luxation, in which the usual signs of delayed proliferation of the cartilage cells and ossification were

found in the luxated hip, while on the normal side the usual picture of proliferation of the cartilage cells and ossification was found.

In none of the twelve joints examined by Grawitz was there any sign of an arthritis or other joint disease.

Grawitz believes to have shown by these seven cases that in congenital luxation of the hip the cause is to be found in a diminished activity of formation in the Y-shaped cartilage of the acetabulum, while the head of the corresponding femur is not at all, or not proportionately affected. And also that when the diminished formative activity affects both acetabulum and head in the same degree, no dislocation occurs. In no case is the congenital dislocation referable to a synostosis of the Y-shaped acetabular cartilage.

As a similar condition, Dollinger refers to the early synchondrosis of the spheno-occipital cartilage producing what has been termed prognathismus; it is also hereditary, and so much so that it is almost a type in certain races.

PROGNOSIS.—Prognosis as to life is good; as to bringing the process to a standstill, is dubious; as to *restitutio ad integrem* is bad. These conclusions, which are borne out by clinical experience, may also be deduced from a consideration of anatomico-pathological conditions.

TREATMENT.—Treatment may be divided into two classes—mechanical and operative.

Mechanical treatment is instituted with two ends in view. The first, and the one which has the more scientific basis and more hope of success, is by means of extension, fixation, support, or the removal of the weight of the body from the capsule in the act of walking, to deprive this affection, in young people, of its progressive character.

The second is, by mechanical means to draw down the head into the old acetabulum, and by keeping it there to produce a cure with *restitutio ad integrem*. But, it would appear, the cause of the dislocation is that the acetabulum is too small for the femur head, hence this treatment is based upon a false premise, and the final results show that the false premise leads to an equally false conclusion.

Operative treatment, with the view of making a movable joint at or near the site of the old acetabulum, has not, as yet, been reported as successful, though it should by no means be placed among the impossibilities. Operative treatment to produce anchylosis in unilateral, or indeed in bilateral dislocations of high degree, is justifiable, and at times the only treatment.

THE National Academy of Science has been in session in this city the past week.

OSTEO-SARCOMA OF THE SPINE, WITH REPORTS OF CASES.[1]

BY FRANK BILLINGS, M.D.,
OF CHICAGO,
PROFESSOR OF PHYSICAL DIAGNOSIS AND CLINICAL MEDICINE IN THE CHICAGO MEDICAL COLLEGE.

THE purpose of this paper is to present a report of cases of osteo-sarcoma of the spinal column. This location of the disease is rare enough to make the cases unique, and is my only excuse for presenting them. It is not necessary to describe the well-known histological characteristics of sarcomata in general; suffice it to say, that all known histological types of sarcoma may partake of the osteoid type (Joh. Müller, Rindfleisch), and that the osteo-sarcoma may undergo cystic, mucoid, cheesy, and fatty degenerative changes, as in the other sarcomata. The osteoid form, too, is prone, like other forms, to extend to other tissues and organs by metastasis; of these secondary growths more will be said later.

Though osteo-sarcoma occurs usually during early adult and middle life, it is not entirely unknown in advanced age, in childhood, or even congenitally.

Two varieties are recognized by most writers: (1) the *central*, or *myelogenes*, so called because it takes its origin from the medullary canal or diploë; and (2) the *peripheral* or *subperiosteal*. As the cases to be reported include only the peripheral form, the former will not be considered.

The peripheral, subperiosteal, or osteo-chondroma of Virchow is more malignant than the central variety, and is formed of granulation tissue with young bone-cells (Billroth), or of the latter mixed with very large spindle-cells. The presence of bone seems not to alter the natural tendencies of sarcomata to unlimited growth and to recur locally, and, by metastasis, in distant organs and tissues. Of spinal osteo-sarcomata, owing to their rarity, but little is to be found in pathological literature. As trauma seems often to be the starting-point of osteo-sarcomata, the protection afforded the spinal column by a thick pad of muscle, and by the intervertebral cartilages, may explain their rarity in this situation.

Spinal osteo-sarcoma springs usually from the lumbar or lower dorsal vertebra. It may grow from the bodies of any part of the spinal column, and, like other sarcomata, grows with variable rapidity. The tumor is usually globular or ovoid, is generally encapsuled by the periosteum and surrounding connective tissue. If it occur on that part of the column which renders the tumor palpable, it is found hard and resistant to the touch, and usually immovable, because of inflammatory adhesions to the surrounding tissues or organs. One important characteristic is the early involvement of the lymphatic vessels and glands, especially those near the tumor.

[1] Read before the Chicago Medical Society, October 21, 1889.

The early involvement of the lymphatic glands in osteo-sarcoma of the spine, leads to the development of secondary growths in other organs, notably in the abdominal cavity and lungs, the secondary tumors always partaking of the characters of the primary.

The clinical course, in comparison with sarcoma elsewhere, is rapid, as might be supposed from the early involvement of the lymphatics and the rapid occurrence of metastatic growths in other important organs. As a rule, too, the tumor invades the bone at the point of origin, and the growth advances far enough to press upon the spinal cord; or a hemorrhage occurring into the spinal canal causes pressure paresis, or paralysis. Usually the indurated tumors develop more slowly than the softer forms, and the rapidity of growth and malignancy are in direct ratio to the softness of the tumor, which is explained by the fact that the softer form is made up of round cells.

Though the symptoms must necessarily be peculiar to each case, pain in the spinal column at the seat of the growth, with neuralgia of the corresponding spinal nerves, is almost constant. The precursor of this pain is often a general backache, usually located in the lumbar region. The presence of sugar in the blood, as mentioned by Freund, is not of sufficient reliability to make it a safe diagnostic sign of sarcoma in the body; and of peptonuria the same may be said.

The histories and clinical course of my cases are as follows:

CASE I.—Mr. M., aged forty-nine, Swede, married, and stockman by occupation, has lived in America for twenty-five years. Family history free from hereditary taint of any kind. Three brothers and one sister living and in good health. The patient's health has been good until the present illness commenced. Habits vicious in early life, when he had gonorrhœa and a venereal sore, which, however, was not followed by constitutional symptoms. He has used alcohol to excess at times, and has suffered from alcoholic gastritis, with consequent dyspepsia and vomiting.

During the summer of 1888 the patient's general condition of health deteriorated; his appetite became poor, and everything taken into his stomach caused discomfort. Severe, constant, lumbar backache, worse at night, and aggravated by exercise, became a prominent symptom. His trouble was ascribed to drinking the alkaline water of the West.

In September of 1888 he came to his home in Chicago and consulted several physicians, each giving a diagnosis different from the others. His spleen was said to be enlarged, and consequently chronic malaria, chronic dyspepsia, incipient leucocythæmia, etc., were diagnosticated.

December 3, 1888, I took charge of the patient. He was then confined to his bed, but able to sit up. He was slightly emaciated and had a cachectic appearance. His face had a peculiar dusky, red hue, and on the skin of his body and extremities were peculiar brown pigmented spots, from the size of a pea to a silver quarter. The spots were most numerous over his back. One supra-clavicular lymphatic gland of the right side was enlarged to the size of an almond. In the left hypochondrium a tumor, the size of an infant's head, could be felt. The tumor moved vertically with respiration, was ovoid in form, of medium resistance to touch, and only slightly painful on strong pressure. No murmur could be heard. The absence of a defined border and notch seemed to exclude the spleen. The liver, lungs, and heart appeared normal. The blood showed no increase of white blood-corpuscles, though an occasional very large leucocyte could be found. The urine was scanty, of high color, but contained nothing abnormal. The patient complained chiefly of severe aching pain in the lumbar region of the spine, which was always worse at night. The diagnosis was made of probable sarcoma of the spinal column.

I saw the patient frequently until his death, which occurred on January 19, 1889. During that interval the tumor grew rapidly, finally extending forward to the median line, and downward to a line drawn from the umbilicus to the crest of the ilium. The patient daily became more emaciated and cachectic, and the pain in the back could only be controlled by opium.

Ten days before his death the patient complained of numbness in his feet and legs, and on the day following the appearance of this symptom he suddenly became paraplegic. Absolute paralysis and loss of sensation were present below the second lumbar vertebra. Retention of urine and constipation made the case much more difficult to take care of from this time.

The paralysis and anæsthesia gradually extended upward until weakened respiration and cardiac asthenia combined to produce œdema of the lungs and death.

A post-mortem examination was made twenty-four hours after death, and the diagnosis confirmed. A primary, large round cell osteo-sarcoma was found involving the first and second lumbar vertebræ. The body of the first vertebra was softened and broken down by the sarcomatous tissue. A large blood-clot occupying the root of the tumor, extended into the spinal canal, firmly compressing the cord. Secondary tumors were found in the lymphatic glands on the left side of the spinal column, from the last lumbar vertebra upward to the root of the left lung, and also in the bronchial and mesenteric glands. Calcareous deposits were present in both primary and secondary tumors. The spleen, liver, and lungs were free.

CASE II.—Mr. G., German Jew, aged forty-eight, married, merchant. Family history excellent; no history of hereditary disease. The patient's previous health had been excellent, and he had always been sober and industrious, and never afflicted with venereal disease. He had used alcoholic beverages in moderation.

In December, 1888, his health began to fail,

though he presented no well-defined symptoms. His appetite became poor, he gradually lost flesh, and soon developed a slight cough with muco-purulent expectoration. Four or five moderate attacks of hæmoptysis occurred during the first four weeks. His disease was diagnosticated consumption by a homœopathist.

On January 30, 1889, he became the patient of Dr. H. Milbacher, of Aurora, to whom I am indebted for a complete history of the case and notes of the post-mortem examination.

On taking charge of the case Dr. Milbacher found the patient complaining of cough with muco-purulent sputa, of sleeplessness, weakness, loss of appetite, indigestion with flatulence, constipation, constant, aching pain in the dorsal and lumbar spine, and lancinating and shooting pain along the course of the intercostal and lumbar nerves of the right side.

A careful examination revealed slight emaciation and moderate anæmia. The temperature and pulse were normal. There was evidence of partial consolidation, in areas, of the left lung, with some pleuritic effusion on the same side. There was tenderness on pressure on the right dorsal and lumbar nerves near the spine. The sputa contained no tubercle bacilli. Urine was diminished in quantity, and contained an abundance of urates, but nothing abnormal. During February there was continued emaciation, anorexia, indigestion, constipation, and cough, with an increase of the morbid process in the left lung. There was also developed marked paresis of the right thigh, with loss of sensibility in the area supplied by the external cutaneous nerve. Several small subcutaneous tumors developed over the abdomen, and one small tumor between the inferior angle of the scapula and the vertebral column on the right side. The tumors were slightly tender on pressure and movable. No tubercle bacilli could be found on repeated examinations of the sputa.

On March 3, 1889, I was called in consultation. The patient was then confined to his bed, and was emaciated, pale, and cachectic in appearance. He complained of aching pain in the dorso-lumbar region, with sharp pains radiating over the lower right chest, right lumbar region, and right thigh. His appetite was poor and his digestion imperfect.

On examination there were found several subcutaneous, irregular, doughy tumors over the abdomen, the smallest the size of a filbert, the largest two or three inches in length, and irregular in outline. Under the posterior border of the right scapula, extending toward the vertebral column, was found a similar subcutaneous mobile mass about the size of a lemon. The tumor fluctuated, and on aspiration yielded blood. There were slight paresis and partial loss of sensation in the right lower extremity. The right chest presented nothing abnormal except the tumor mentioned. The left chest was somewhat less mobile than the right, and there was diminished and absent vocal fremitus, in irregular areas in the mammary and scapular regions. There was relative dulness on percussion over the whole left lung, with marked dulness over the scapular region, and in irregular regions over the anterior surface. There was also evidence of some fluid in the left pleural cavity. The sputa contained no tubercle bacilli. The urine was normal, and the blood showed only an occasional very large leucocyte.

The cachexia, superficial tumors, slight paresis, and irregular distribution of the signs over the chest, led us to make a diagnosis of osteo-sarcoma of the spine, with secondary growths in the left lung, pleura, and skin. The prognosis, consequently, was death, with probably preceding paraparesis or paraplegia. Dr. F. S. Johnson saw the case subsequently and concurred in the diagnosis.

The patient rapidly declined, with increasing paresis ending in paralysis of the lower right extremity, increase in size of the subcutaneous tumors, and increase of the pleuritic exudate of the left side. The heart's action was weak, with pulse of 110 to 120; temperature usually normal. Death occurred on March 27, 1889, in an advanced stage of asthenia, from heart failure and œdema of the right lung, both induced by a rapid increase of the pleuritic effusion on the left side.

An autopsy made twenty-four hours after death revealed the following condition:

The visceral and parietal pleura of the left side were transformed into a firm white mass, from one-half to one inch in thickness, with a nodulated surface firmly adherent to the sternum, the ribs, pericardium, and diaphragm. The left lung, compressed to one-half its normal size, occupied the upper portion of the chest cavity, and was covered by the thickened, diseased pleura. Within the lung was a large, round, whitish tumor, with a soft colloid central spot. The compressed lung formed a thin capsule for the tumor. The lower portion of the chest cavity was filled with five or six litres of watery, straw-colored serum.

There were two spinal tumors. One, as large as a fist, was attached to the body of the eighth dorsal vertebra, and could be traced into the intervertebral openings of the spinal canal. It covered the anterior surface of the neck of the seventh, eighth, and ninth ribs, being attached firmly to their periosteal covering. There was partial destruction of the body of the eighth rib by pressure, the tumor extending through the opening in the rib to form the subcutaneous dorsal tumor. On section the growth was found to contain blood, partly liquid and partly coagulated. The second spinal tumor, about the size of an orange, grew from the second and third lumbar vertebræ, and was covered by the somewhat atrophied right psoas muscle. There was destruction of a portion of the vertebræ to which it was attached, and an invasion of the spinal canal. The lymphatic glands of the mesentery and omentum were involved. There was one large gland, the size of an orange, in the great omentum just below the transverse colon. Other tumors were found in the kidneys and the pancreas. A microscopical examination revealed a round-celled sarcoma.

CASE III.—Mr. S., aged thirty-seven, salesman, single, American. His family history was free from hereditary taint. The patient had always been temperate in the use of alcoholic beverages, and denied having had venereal disease.

During the last two weeks of May, 1889, the patient, while assisting his family in packing the household goods preparatory to moving, was suddenly seized with severe pain in the right inguinal region, and continued to suffer with sharp pain in that locality, accompanied, he said, with fever. He was decidedly jaundiced. His physician pronounced his case typhlitis. The patient made a quick recovery from the acute attack, and on June 10th arrived in Chicago. When I called to see him he was pretty well nourished and not markedly pale. He walked in a slightly stooping posture, because of inability to extend completely his right thigh without pain. On examination the thoracic viscera, the liver, and spleen presented no abnormal signs The urine was normal. On a level with the umbilicus, in the course of the ascending colon, could be felt an irregular, slightly movable, and tender mass. This was dull on percussion and easily isolated from the liver and the right kidney.

He was given a large enema of soap and water, which moved his bowels thoroughly, but the tumor did not diminish in size. The patient was then obliged to leave town, and I did not see him again until July 4th, when the tumor had increased greatly in size, was hard, and gave a feeling of fluctuation The patient was told that it was probably a cyst. He desired Drs. E. C. Dudley and D. A. K. Steele in consultation, and on July 17th those gentlemen examined him, and advised an exploratory abdominal section. At the patient's request, he was tranferred to Dr. Dudley's care at St. Luke's Hospital, and on July 30th Dr. Dudley made an exploratory incision into the tumor, after an unsuccessful attempt at aspiration. The tumor was found to be a solid mass, firmly attached to the right sacro-iliac synchondrosis, and pushing the peritoneum and ascending colon forward; all being blended and united to the anterior abdominal wall by inflammatory adhesions. The mesenteric glands were enlarged and calcified as far as the finger could explore. The tissue of tumor examined microscopically revealed spindle-cell sarcoma. The patient rapidly recovered from the exploratory wounds, and on August 20th left the hospital for his home in Benton Harbor, Michigan.

September 23d, when he returned to Chicago, the tumor had increased in size, and there was slightly increased emaciation and pallor. There was also a good deal of distress due to flatus. On the 26th, a small abscess formed in the cicatrix of the incision into the tumor, and on opening it, half an ounce of dark blood and pus escaped.

October 1st the patient again returned to Benton Harbor, and his father states, in a letter of recent date, that the wound is still discharging a bloody pus and that the tumor is slowly increasing in size. The hard form of this tumor will make the case of longer duration than the others reported.

235 State Street.

Bromidia.—At Kansas City, Mo., judgment has been given in the sum of $500 each against seven local druggists for counterfeiting the trademark of the above preparation.

GUNSHOT WOUNDS.

With the Reports of Four Cases.

By THOMAS H. MANLEY, M.D.,
of New York.

In these days of antiseptics and a new technique in the management of wounds it is important that surgeons should report their cases in detail and impartially to the profession.

It is especially imperative to examine into the treatment with the most discriminating care; for one should have the various methods of treatment well fixed in mind, and be prepared for every emergency, before he would assume to deal boldly and confidently with serious gunshot wounds.

It is well, too, that we take a glance at the recent studies on the subject, divesting ourselves for the time of any undue enthusiasm or prejudice. We must look squarely in the face the claims of modern surgery, and determine, if possible, whether the advantages accruing from antiseptics in civil practice are correspondingly great in war; or whether, in certain regions of the body, their application is useless, or harmful.

The relative value of antiseptics to the military surgeon cannot yet be estimated; but their advantages and disadvantages, in wounds resulting from the explosion of firearms and in penetrating wounds, can be determined in civil practice.

A great impetus was given to abdominal surgery through the memorable essay of Sims, presented to the New York Academy of Medicine, in the autumn of 1881. In this the author boldly, and with marvellous energy and convincing argument, advocated abdominal section for almost every lesion involving the peritoneal cavity, whether from disease or traumatism, acute or chronic. There can be no denying that this lucid and skilful exposition of the possible future of the treatment of lesions in the abdominal region had much to do with the extended application of exploratory laparotomy, and opened a new era in surgery.

Many surgeons, especially in America, promptly manifested their acquiescence with the views of Sims, by commencing the treatment of penetrating wounds of the belly by laparotomy. Senn conducted a series of investigations on the abdomens of dogs, and demonstrated that the intestines of these animals would endure almost any amount of mutilation, and make a good recovery.

With the predictions of Sims, and the long, interesting, and successful series of investigations of Dr. Senn, together with the supposed efficacy of antiseptics in preventing infection, it certainly seemed that the treatment of abdominal wounds had attained perfection.

At first, on this side of the Atlantic, we were quite confounded with the brilliancy and originality

of Senn's experiments—supposing that they originated in this country; and we were credulous enough to presume that the deductions reached in these canine investigations would apply to the human being.

Did we think for a moment that Sims's essay was simply the views, theories, and speculations of one known only in his profession as a gynecologist, and whose experience as a general surgeon was so slight as to give but little weight or value to his assertions in this domain of his profession?

And, finally, when we examined the experimental work of the Chicago surgeon—exclusively of the apposition of the gut by lateral approximation, and ballooning the bowel with gas—we find that the whole of this line of intestinal surgery is very old; the only difference being that the older surgeons did their work on man, while Dr. Senn's was confined exclusively to dogs. Messrs. Reybert, Jely, Joubert, Boutard and Amussat, distinguished French surgeons, in the early part of the present century, had separately and severally done resection of the bowel, with enterorrhaphy.[1] They invaginated the bowel, as a means of establishing continuity, after division or exsection. They used the plate, or *tablet*, as they designated it, for lateral apposition of the serous surfaces of the bowel, guided by the same principles in using it on man, as was Senn on animals.

In our haste to put into practice the latest methods, we neglected to institute a comparison between the brute—in which, regardless of antiseptics or drainage, we may eviscerate the bowel by the yard without bad symptoms following—and the human being, whose organs in the abdomen are structurally and functionally unlike the dog's; and on whom we are seldom called to operate, except where shock is marked, and blood has been lost. Finally, the most successful surgeons have altogether abandoned antiseptics in abdominal operations.

Dr. L. A. Stimson,[2] in a paper of great literary, statistical, and scientific value, collected together the various cases of gunshot wounds of the abdomen occurring in New York during the past eight years, and presented figures of startling significance to those of us who had hoped that modern science had robbed penetrating wounds of the abdomen of their former terrible mortality. His figures showed that, as far as could be learned, the mortality following operative interference in penetrating gunshot wounds of the abdomen was greater than when the older and more conservative plan of expectant treatment was in vogue.

My cases, herein reported, embrace lesions of various regions of the body; but the most recent case being pertinent to the discussion of penetrating wounds, I will narrate it first:

CASE I.—J. B., aged forty-four, married, shopkeeper, of spare habit, who had previously enjoyed good health, was admitted into the Harlem Hospital, September 13, 1889. When found by the Ambulance Surgeon, Dr. Walter H. Dade, he was lying on his back, almost pulseless; the extremities being cold and the features of a ghastly, ashy white. This was about forty-five minutes after the injury. Restoratives were freely given, and he was hurried off to the hospital.

On admission he was still greatly prostrated, though had rallied somewhat from shock. His pulse was 135 per minute and feeble. His lips, nose, and ears were of a waxy white, and cold. He was vomiting blood freely, and complained of pain in the epigastrium.

On examination, it was found that he had accidentally shot himself with a 36-calibre Smith & Wesson revolver, the ball entering about two inches to the left of the median line and three inches from the navel, passing through the seventh intercostal space anteriorly; then taking a course upward and fracturing the seventh rib, two inches from the corresponding spinous process to the right.

Though probing was not attempted, it was evident that the lung had been torn through, as immediately over the seat of fracture there was considerable bulging of the integument with an extensive margin of emphysema into the loose connective tissue.

This wound was inflicted one hour after he had eaten a full meal, and it is probable that the stomach was distended when the ball entered.

If this were the case, it must have caused great destruction, for on inspecting the relations of the organs and tissues in the cadaver, or carefully considering the anatomical situations of the various structures, it was seen that if the ball passed directly upward and backward, in a straight line, the pleural cavity was perforated; afterward the thin, edge of the liver, and the stomach, the missile crushing through the crus of the diaphragm, opening the pleura and lung again, posteriorly, to be arrested only in its transit by the rib, which it shattered.

It seemed positive from the subjective and objective symptoms that three important organs and two cavities were perforated, viz , the liver, stomach, and lung, with both the pleural and peritoneal cavities. He undoubtedly was suffering greatly from loss of blood when admitted, as proved by his exsanguinated condition and the protracted shock. The emphysema and hæmatemesis were strong evidences of lung and stomach lesions.

It was not deemed advisable to jeopardize his life further by any kind of operation. He was given cracked ice, and laudanum unsparingly for the purpose of tranquillizing the mind and relieving pain. The bullet wound was antiseptically dressed, and a firm binder applied around the thorax. During the first night he had considerable pain in the abdomen and chest, but in the morning felt better. Stimulants and light nourishment were then freely given.

[1] Operative Surgery and Surgical Anatomy. By C. Bernard et Ch. Huette (De Montargis), Paris.

[2] N. Y. Med. Journal, Oct. 25, 1889.

The remainder of his history is uneventful. He made a good recovery. Ten days after his admission, the swelling having subsided, the ball was felt under the skin posteriorly, and removed. He left the hospital on Oct. 2d, entirely restored to health, though he was yet somewhat weak.

CASE II.—D. J., aged thirty-three, policeman, was shot on the morning of July 2d, the ball entering the body about three inches to the right of the sixth chondro-sternal articulation. No wound of exit could be found. The bullet was discharged from a 36-calibre revolver—the man's own weapon—and was fired while the muzzle was in close contact with the skin, as the latter was considerably burned and blackened by powder.

The wound was not probed. He was suffering considerably from agitation of mind when admitted, though it was clearly evident that he had lost but little blood. It was quite clear that the missile had not entered the thorax, for if it had, and taken a horizontal line backward, it must needs have penetrated both the peritoneal and pleural cavities, and done terrible havoc with the convex surface of the liver, which mounts upward nearly to the nipple-line on this side; and, moreover, the spongy, vascular tissue of the lung would have given rise to free hemorrhage had it been perforated.

The ball undoubtedly struck a strong, flexible rib, which deflected it in a direction where but little harm was done. We could find no trace of the missile, for, though of considerable size, if it were lodged in the body, there was no swelling, soreness, or pain which gave the slightest clew to its whereabouts. I am inclined to believe that it did not enter at all, but that after its velocity was broken by the resistance of the rib, it rebounded and fell to the ground.

This man left the hospital one week after admission, in good condition, though with some soreness over the seat of injury.

CASE III.—S. L., aged twenty-four; bartender. On Monday, June 12, 1889, while in an altercation, he was shot. He was brought to the Harlem Hospital immediately after being wounded, by the ambulance. On admission, it was found that the ball had struck exactly in the centre of the chin—at the symphysis mentis—and at its point of impact had detached a small, shell-like piece of bone. The fellow suffered none from shock, and was out in a week.

Not the slightest trace of the ball could be found. There was no evidence of its having lodged anywhere in the body. The day after admission, he had some deep-seated pain in the region of the cervical plexus, but this could be accounted for by the violent struggle with his assailant before the shot was fired, and in which he may have strained the muscles of the shoulder.

As in the preceding cases, I am inclined to believe that the ball rebounded and came out as it entered.

Baron Larrey[1] mentions several such cases, in his experience, as does also Guthrie.[2]

[1] Chirurgie Militaire, vol. ii. p. 217, 4th ed.

[2] The Surgery of the War of the Peninsula, vol. i. p. 374.

CASE IV.—J. H., aged thirty-one, was shot on October 13th. As he saw his antagonist draw his pistol, the patient threw up his arm as a shield. As a result, his head was saved, but he received the ball in the dorsal aspect of the right forearm, about midway between the wrist and elbow.

When I saw him the following day, there was considerable infiltration into the connective tissue, accompanied by swelling and discoloration. The skin was of a dark yellow color, mottled, and of a decidedly ominous aspect. I made a free incision into the parts, with a view of relieving the turgescence of the vessels and exploring for the ball. Careful probing in every direction failed to reveal the bullet.

The following day he felt so much better, and the circulation was so much improved, that he asked to go home, saying that he was well able to pay for professional service. I am informed that he is doing well.

I am aware that in the brief summary presented each report has neither been full nor possessed of much value, but the cases taken collectively teach important lessons:

1st. That we have yet no accurate method for locating missiles when lodged in the body.

2d. That with the expectant, or rather the conservative plan of treatment, many serious traumas of the great cavities may terminate favorably.

3d. That *opium* must be given with a free hand until shock is past and pain is subdued.

4th. It seems probable that under certain circumstances a bullet may, after coming in contact with a firm, strong, resisting body, rebound and not lodge in the tissues; hence the uselessness, and sometimes the danger, of free probing in this class of injuries.

TORTICOLLIS GREATLY IMPROVED BY TOXIC DOSES OF GELSEMIUM AFTER FAILURE OF MYOTOMY.

BY CHARLES B. WILLIAMS, M.D.,
CLINICAL ASSISTANT IN THE PHILADELPHIA POLYCLINIC.

THE case here reported is that of a man aged twenty-four, who was admitted to the Polyclinic Hospital Oct. 24, 1888. His family history was good. His previous history negative, excepting that he has had several slight attacks of torticollis, and a number of falls upon the shoulders and neck, and has suffered from rheumatism. In the autumn of 1886 he noticed a jerking of his head and neck to the left side, associated at times with severe pains. This continued and gradually grew worse for a year, when he began to have also twitchings of the left arm and leg. He soon lost entire control of the left foot and could not stand properly. After three months of medical treatment he began to have more control of his leg. When he first came under observation he described the muscular twitching as being more like a tremor. While the patient was sitting quietly no spasm was noticed, but on attempting to walk, use his arms, or move his head, a cramp or spasm oc-

curred in the muscles of the neck, and his head was turned to the left. The chin and face did not turn *upward*, as would be the case if the right *sterno-cleido-mastoid* muscle was affected, but rather horizontally and outward; hence it was believed to be the splenius capitis muscle of the left side that was affected. Any voluntary muscular action would cause the spasm. On Nov. 2, 1888, a myotomy was performed by Dr. John B. Roberts upon the muscle that was supposed to be the source of the torticollis, but with no beneficial results. Dr. Roberts furnished the following description of the operation:

"On account of the peculiar twist of the head, which seemed to imply that the splenius capitis was at fault, I determined to divide the left splenius capitis instead of the right sterno-mastoid. Accordingly, on Nov. 2d I exposed the muscle, and proceded to do a partial myotomy, dividing the belly of the muscle throughout its entire thickness, but leaving a band of fibres upon each edge intact, hoping in this manner to weaken without destroying muscular action. This was done because it was not absolutely certain that I was cutting the muscle which produced the spasm, and, in order that I might at any time during the after-treatment bring the fibres together, if the torticollis was not improved, I introduced a wire suture through the cut edges, crossing the ends and bringing them out through the skin, thus causing a loop underneath the skin, so that traction on the ends would draw the muscular bellies together. For a day or two some improvement was perceptible, which caused me to withdraw the suture and allow the fibres to remain retracted. The head and neck for some time was kept in position by a plaster-of-Paris bandage, and it was believed that something was gained by the operation. Within two weeks, however, the spasm returned. I then made a subcutaneous division of the splenius muscle with so much freedom that I believed I had divided all its fibres. The results were again unsatisfactory. There was temporary improvement, but it soon became evident that the condition was practically no better. Any violent motion, such as walking or the use of his arms, at once brought on a spasm, in which his head was twisted to the left, with considerable pain in the back of the neck and in the shoulder of the left side. Rigid muscles could also be felt in the splenius region."

Electricity was also used without benefit. He was next placed upon the fluid extract of gelsemium in ordinary doses, but without relief. Dr. S. Weir Mitchell then suggested hyper-physiological doses of the drug.

On Dec. 29, 1888, the patient was admitted to St. Agnes Hospital in an unchanged condition. He was placed upon full doses of the tincture of gelsemium without the production of any physiological effect. He was then placed upon full doses of Wyeth's fluid extract of gelsemium, the dose being gradually increased so that by Feb. 1, 1889, he was taking twenty-three drops three times a day.

The physiological action of the gelsemium was now manifested by dilatation of the pupils, languor, some headache, and flushing of the face, with slight attacks of giddiness; the patient describing his sensations as though a band were tied around the forehead. On Feb. 4, 1889, he was taking ten grains of the salicylate of sodium, and five of iodide of potassium three times daily, with eighteen drops of extract of gelsemium four times daily. On March 15, 1889, the administration of other drugs was discontinued and the gelsemium increased to twenty-four drops four times daily, with the same effects as above noted. The patient, who was intelligent, was allowed to regulate the dose of gelsemium according to its physiological effects, being instructed to take the largest possible dose. The patient, much improved in his condition—in fact, almost entirely free from pain and spasm, was discharged from the hospital March 26, 1889, and subsequently returned to work.

A letter from him, dated June 9, 1889, stated that at that time he was still improving, and was taking ten to fifteen drops of the gelsemium five times daily. He had found that twelve drops of a preparation of gelsemium from Allegheny City were stronger than thirty drops of that obtained in Philadelphia, showing how great is the difference in the relative strength of preparations of powerful drugs as prepared by different chemists.

The commencing dose of gelsemium should never be greater than two to three minims, as alarming symptoms have been caused by larger doses. It seems remarkable that this patient could take such enormous doses apparently with no ill effect.

A somewhat similar case of torticollis was treated by Dr. C. K. Mills and Dr. Roberts at the Polyclinic a few months previous to the admission of this patient. In their patient, however, the spasm appeared to be chiefly of the sterno-mastoid, though it affected a number of the posterior cervical muscles. The characteristic uplifting of the chin showed contraction to be of the opposite sterno-mastoid. This patient, in order to keep his head from being turned violently to the right, constantly kept between his teeth the knotted end of a handkerchief, and with the other end in his left hand was able to oppose the spasm. The habitual position of his shoulders and back seemed to indicate that numerous muscles were affected by the spasm. His head and shoulders were constantly bent forward in addition to the constant clonic spasm produced by the sterno-mastoid.

Dr. Roberts in this case excised about one inch of the spinal accessory nerve, making the incision posterior to the left sterno-mastoid muscle. The nerve was recognized with absolute certainty by means of the electric current. No benefit followed this operation. The patient has not returned for treatment, though efforts have been made to find him in order to test the virtues of gelsemium.

HOSPITAL NOTES.

LATERAL CURVATURE OF THE SPINE—HIP DISEASE.

Abstract of a Clinical Lecture Delivered at the Children's Hospital, Philadelphia.

By JOHN ASHHURST, Jr., M.D.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF PENNSYLVANIA.

Professor Ashhurst showed the class a case of marked lateral curvature of the spine, which was made evident by following downward the line of the spinous processes, and explained that the bodies of the vertebræ were rotated to a greater extent than appeared externally. In the present patient the spinous processes of the dorsal region curved to the right, and on the same side was to be seen a sharp projection caused by the tuberosities and angles of the ribs. In this affection two curves are always found, the one compensatory to the other, the primary curve usually being the lower, though the upper is more distinct.

The predisposing cause of lateral curvature is relaxation of the ligaments, and the exciting cause some malformation of the body, or some vicious habit of standing or sitting. For example, if one limb is shorter than the other, the pelvis will be tilted upward on one side and a curve produced in the spine. The military position of "standing at ease," with one foot forward, has the same tendency. Another cause is sitting at too high a desk, which necessitates the elevation of one shoulder.

Lateral curvature is frequently met with in young girls, but in the majority, as they advance to womanhood, it disappears or becomes too slight to be noticed. Often the first sign is observed by the mother, who will say that the child's shoulder is "growing out." On examination it is found that the scapula does project, and that there is already some deviation of the spinous processes, the principal curve usually being above and toward the right side.

Treatment in the earlier stages can usually be satisfactorily conducted by the correction of improper positions and by gymnastic exercises. When a girl is found with the scapula projecting, and some pain in the part, she should be directed to lie flat on her back for an hour each day. Desks should be made of the proper height, and children should be trained to sit before them without elevating a shoulder. If, as is not infrequently the case, children fall into the habit of "standing at ease," with one foot advanced, the habit should be broken. Patients should be made to sleep upon a firm mattress, with a single pillow under the head, but not under the shoulders. Useful gymnastic exercises are those which cause the arms to be elevated, such as swinging from a horizontal ladder, or the use of pulley weights.

When, however, the disease is further advanced an apparatus is advisable, which, for most cases, should have a pelvic support and means for reinforcing the weakened spine. In very bad cases a plaster jacket gives better support than a brace, and has been used in the case before the class.

Professor Ashhurst then showed a case of antero-posterior curvature, or Pott's disease, in which the deformity was angular and without any lateral curvature. Pott's disease is a more serious affection than lateral curvature, as it involves the bones of the vertebral column instead of the soft structures. Usually more than one vertebra is diseased, causing a projection of several spinous processes, as was well shown in this patient.

There are certain distinctive risks and dangers in lateral curvature, of which contraction of the chest and consequent interference with respiration are the most important. Such a condition seriously complicates pneumonia or pleurisy. In its milder forms, however, lateral curvature is not a grave disease, but merely a deformity.

HIP DISEASE.

Professor Ashhurst then brought before the class a case of hip disease in the third stage, with abscess, in which he proposed to perform excision of the joint. An incision was made in the line of the muscular fibres above, curving around the back of the trochanter, and continuing below in the direction of the muscle. Such an incision exposes the joint thoroughly without unnecessary disturbance of the tissues. On passing the fingers into the wound, it was found that not only the head of the femur but the acetabulum was involved. The head of the bone was then turned out of its cavity, sawn off, and the end rounded with bone forceps, this step being of importance, as cases are recorded in which a spiculum of bone has penetrated the femoral artery or vein. During the manipulations an abscess in front opened into the wound, which necessitated thorough washing out of the cavity. A counter-opening was made in the anterior wall of the abscess, and a drainage-tube inserted through the wound. The wound was then sutured and dressed in the usual manner.

Professor Ashhurst said that excisions of the hip were less satisfactory than any other of the large excisions; not that, among children, many died from the operation, but satisfactory cicatrization was less likely to be obtained. Whether this is due to the presence of tuberculosis, or whether it is merely due to the difficulty of securing proper drainage, cannot be positively determined. Professor Ashhurst believed that tubercles were often, though not invariably, present.

CLINICAL MEMORANDA.

GYNECOLOGICAL.

Mania following Gynecological Operations.—I wish to supplement the cases of mania following gynecological operations, reported by Dr. T. Gaillard Thomas to the New York Academy of Medicine, as published in The Medical News, April 13, 1889, with two cases that have occurred in my practice.

Case I.—Mrs. E., aged thirty-five, was operated upon by Dr. J. H. Etheridge, in the Presbyterian Hospital, Chicago, in November, 1888, for salpingitis and cystic ovaries. Both tubes and ovaries were removed. The patient was much reduced, and was a typical case of hystero-neurosis, there being scarcely any organ or part of her system but which, during the previous six months, had suffered from derangement of function or sensation. She had been extremely melancholy, and, since her recovery, says that those six months are nearly a blank to her, only occasional incidents being remembered, and

those generally in an exaggerated or ridiculous manner. On the third day after the operation acute melancholia set in, and she was wildly delirious for seven days. On the twelfth day she became calm and rational; said she felt better and would get well. There has been no mental aberration since; neurotic disturbances, such as pain in back, knees and heels, have troubled her to some extent, but have been greatly benefited by galvanism. She is being gradually restored to health.

CASE II.—Miss H., aged twenty-four. Family history shows a taint of insanity, a brother having been treated in an asylum, and her father died an inebriate. She had cerebral meningitis at seven, and a second attack at thirteen. Puberty occurred at fourteen. Becoming frightened at the first menstrual flow, from ignorance of its nature, she ran to a creek near by and sat in the ice-cold water, washing herself until the flow ceased. Pain and severe suffering occurred at each succeeding menstruation. During the succeeding ten years she was treated by several physicians. She suffered much from acute pain in both ovarian regions, nausea, headache, and frequent attacks of metro-peritonitis. She became impatient, irritable and restless, and life became a burden to her; had attacks of acute melancholy, and was an inmate of the Mt. Pleasant, Iowa, Asylum for eight months. She was sent home as being "improved."

When consulted in February last, I found her to be fairly nourished. She still had acute pain, nausea, and headache at each menstrual period, with frequent attacks of melancholia, irritability, and religious fervor; bowels very constipated, and appetite capricious, besides many minor symptoms. There was vaginal hyperæsthesia; the broad ligaments on either side were thickened and exquisitely sensitive. In view of her mental condition, and the length of time she had been affected, there was but little hope that a removal of the uterine appendages would accomplish more than to relieve the periodical distress incident to menstruation. She eagerly requested an immediate operation, willing to take any risk that promised her immunity from her sufferings. I removed both tubes and ovaries, a few days later. There were adhesions, which made it difficult to bring the ovaries up out of the pelvis. Both were cystic; in one all, and in the other nearly all normal ovarian stroma had been destroyed. The tubes were enlarged and thickened. On the ninth day violent delirium of a melancholy type set in, and she died on the twelfth day, comatose. An autopsy showed the abdominal and pelvic cavities to be clean and odorless. The ends of the ligated stumps were wholly free from suppuration. Complete union had occurred throughout the abdominal incision.

In opening the calvarium, the skull was found to be extremely thick and hard. At no point along the line of section was it less than three-eighths, and in many places it was fully one-half an inch in thickness. The dura mater was very vascular, and so intimately adherent to the skull that great violence was necessary to strip it off, and it plainly showed the results of old inflammations. The surface of the brain was much congested, as was also the choroid plexus. The brain was well formed, the convolutions well marked, and the sulci remarkably deep. The cerebral substance was apparently normal.

E. H. KING, M.D.

WEST LIBERTY, IOWA.

MEDICAL.

Lozenges of Pyrethrum and Pilocarpine for Relief of Dryness of the Throat and Mouth.—I have used with much satisfaction for the relief of the uncomfortable sensations of heat and dryness which characterize many acute and chronic affections of the mucous membrane of the mouth and throat, a lozenge made according to the following formula:

Fluid extract of pyrethrum .	2–3 minims.
Pilocarpine hydrochlorate .	$\frac{1}{32}$ grain.
Pure extract of licorice .	2 grains.
Powdered acacia . . .	2 "
Glycerin	1 minim.
Sugar, enough to make .	20 grains.

The lozenge is allowed to dissolve in the mouth, and one is used every two, three, or four hours, as may be indicated. Should more frequent use be necessary the quantity of pilocarpine should be reduced. The addition of two grains of ammonium chloride will often be beneficial in subacute inflammatory conditions of the mucous lining of the respiratory tract; while in more chronic affections, two or three minims of the oleoresin of cubebs will serve a good purpose. The lozenge has a pleasant pungency, and its effect in keeping the parts well moistened is quite marked.

Speakers and singers have told me that the use of a lozenge just before lecture or performance has made it possible to do work comfortably which otherwise would have caused much pain and fatigue. It is possible that a little extract of coca might be advantageously added for special occasions of this nature.

The lozenges are skilfully prepared by Mr. Frank S. Morgan, of this city, and are dispensed by him under the name of *trochisci pyrethri et pilocarpinæ*.

SOLOMON SOLIS-COHEN.

219 S. SEVENTEENTH ST.

TOXICOLOGICAL.

Tyrotoxicon Poisoning.—On May 29, 1889, about 9.30 A.M., I was called in great haste to see Mrs. R., of this city, who, her husband said, had been taken suddenly and violently ill. While on our way to the house Mr. R. complained of feeling very weak, nauseated, and dizzy, and had a choking sensation. Within fifteen minutes I was at the bedside of his wife. I found her suffering great pain in the region of the stomach, and a severe headache, with dryness of the throat, extremely weak and nervous, with some delirium and convulsive movements of the limbs. Her pulse was 124, weak, and irregular; temperature 99.5°; her pupils fully dilated. Upon inquiry I obtained the following history: Mr. and Mrs. R. were perfectly well previous to breakfast. They ate breakfast at 7.30 A.M., which consisted of milk-toast, coffee, and milk. Before the meal was finished Mrs. R. complained of severe headache, roaring in her ears, and dizziness. Convulsive movements of the limbs soon began, accompanied by a choking sensation; she grew weak so rapidly that she required assistance in reaching her bed. In five or ten minutes she became delirious, and in less than half an hour was totally unconscious, in which condition she remained ten or fifteen minutes, during which time there was an involuntary discharge of urine. The convulsive movements of her limbs con-

tinued until consciousness was restored, and more or less for half an hour following, and the choking sensation still longer; the headache grew worse, and the patient complained of severe pain in the region of the heart. "I feel as if my heart was being crushed between two solid bodies," she said. I administered an emetic dose of sulphate of zinc, which produced free emesis. The convulsive movements stopped immediately, but pain in the head and heart continued until they were relieved by nitrite of amyl. She remained weak during the day; the next morning was able to walk, but owing to extreme weakness, any exertion produced marked palpitation of the heart. At the end of seven days she had completely recovered.

Mr. R., who ate none of the toast, but drank of the milk in his coffee, felt no ill effects until some twenty or thirty minutes after his wife was taken sick, when dizziness compelled him to lie down; he became faint, but did not lose consciousness. His wife's serious condition aroused him, and he came for me, a half mile distant. On the way he experienced a choking sensation, pain in the chest, and headache. He afterward remarked: "I should have considered myself a sick man if my wife had not been so much worse." The milk used had been delivered the day previous about 9 A.M.; received in a tin pail with close-fitting tin cover, and placed at once in the cellar-way, near the cellar-stairs, and close by an open window. Part of the milk was used for milk-toast and part for coffee. That part used for the toast was heated to near the boiling-point, thickened with cornstarch, poured over the toasted bread, and eaten while hot. The milk used freely in the coffee was not heated. Suspecting tyrotoxicon poisoning, I procured the unused portion of the milk for analysis. Mr. Novy, instructor in hygiene and physiological chemistry in the University of Michigan, made a thorough analysis, and found tyrotoxicon present in large quantities.

John Martin, Ph.M., M.D.
University of Michigan.

MEDICAL PROGRESS.

Treatment of Gonorrhœal Orchitis.—Dr. Castel, in *L'Union Médicale*, October 10, 1889, draws attention to the value of internal medication combined with compression and refrigeration, in the treatment of gonorrhœal orchitis. Salicylate of soda, first recommended by Edward Henderson, he has found of use in alleviating the pain and hastening resolution. Observations in the Hospital du Midi prove that after the administration of this drug the majority of the patients found greater relief in twenty-four hours than after other methods of treatment. The duration of the disease was diminished, the painful symptoms disappearing and swelling being reduced in a short time. Six grammes of the salicylate of sodium were given daily. Anemone pulsatilla has lately been highly recommended, and given in the following mixture Dr. Castel considers it about equal in value to the salicylate:

℞.—Simple syrup . . . 120 grammes.
Tincture of pulsatilla . . 30 drops.

A half teaspoonful every two hours. Both drugs have a decided and rapid action upon the seat of pain and cause almost immediate cure.

To obtain compression, Dr. Castel uses Langlebert or Horand suspensory bandages, which are composed of a thick pad of cotton, a piece of rubber cloth pierced for the passage of the penis, and a bandage. The wadding is applied directly to the scrotum. The rubber cloth is placed over it to keep the diseased parts moist, and the bandage supports all and compresses the diseased organs. The effect of a well-applied dressing gives immediate relief, and patients are not obliged to stay in bed, but can walk with ease. The constantly increasing moisture necessitates the renewing of the dressing every four or five days.

Refrigeration is a rapid and decidedly efficacious treatment for the pain of orchitis, particularly in the few cases where the testicle itself is inflamed. In cases where the epididymis and the cord only are affected, as is usual, the good effect of cold is denied by many. Refrigeration is usually obtained by applying ice-bladders to the inflamed parts, and the applications should be methodically continued until all signs of inflammation disappear, or troublesome relapses may occur. An excellent method of obtaining the effects of cold is to apply, for a few moments daily, a simple pad of wadding cooled by a jet of chloride of methyl. This causes the dartos to contract and the skin to become cool and pale. To avoid cutaneous lesions, persistent erythema and vesication, any one of which would prevent the continuation of the treatment, the application should be removed in a few seconds.

Treatment of Barber's Itch.—Dr. Rosenthal orders the diseased skin to be closely shaven, and the following ointment well rubbed in twice daily:

℞.—Acid. tannic. . . . . gr. xlv.
Sulphur præcip. . . . ℥jss.
Zinci oxid. } . . āā ℥jv.
Amyl . }
Vaseline . . . . ℥j.—M.

A month's treatment with this is usually sufficient to cure the disease.

Dilatation of the Stomach in Syphilis.—In the recent International Congress of Dermatology and Syphilography Dr. Jullien, of Paris, stated that he had observed a number of instances in which dilatation of the stomach developed in tertiary syphilis, and believed that it was in many instances the cause of nervous symptoms which were usually attributed directly to syphilis. Large doses of the iodide of potassium were, he thought, not infrequently the cause of the dilatation.

Treatment of Appendicitis.—Dr. Senn thus summarizes his opinions on the operative treatment of appendicitis:

1. All cases of catarrhal and ulcerative appendicitis should be treated by laparotomy and excision of the appendix as soon as the lesion can be recognized.

2. Excision of the appendix, in cases of simple, uncomplicated appendicitis, is one of the easiest and safest of all intra-abdominal operations.

3. Excision of the appendix in cases of appendicitis before perforation has occurred, is both a curative and prophylactic measure.

4. The most constant and reliable symptoms indicating the existence of appendicitis are recurring pains and circumscribed tenderness in the region of the appendix.

5. All operations on the appendix should be done through a straight incision parallel to and directly over the cæcum.

6. The stump, after excision of the appendix, should be carefully disinfected, treated with iodoform, and covered with peritoneum by suturing the serous surface of the cæcum on each side over it with a number of Lembert stitches.

7. The abdominal incision should be closed by two rows of sutures, the first embracing the peritoneum, and the second the remaining structures of the margins of the wound.

8. Drainage in such cases is unnecessary, and should be dispensed with.—*Journal of the American Medical Association*, November 2, 1889.

Version in Contracted Pelves.—Nagel has recently studied this subject, and compared version with forceps delivery in cases of contracted pelvis. His conclusions are, that version is usually preferable. The most common varieties of contraction are, the symmetrically contracted (justo-minor), the flat pelvis, and the flat rachitic pelvis; and the author believes that podalic version is equally indicated in these three forms. He considers the measurement of the diagonal conjugate of little practical value, and measures the true conjugate only. The shortest true conjugate in his cases measured three and one-eighth inches. His record is 60 versions in contracted pelves, without a maternal death; 61 children were delivered, 46 of whom lived. Version should be performed early; mortality and morbidity increase with the duration of labor. The obstetrician must not delay until the os is fully dilated, but should perform version as soon as the hand can be introduced and the breech brought into the cervix, when uterine contractions generally dilate the os sufficiently to permit birth. So long as the membranes have not ruptured the case should be left to nature; but in transverse positions, when the membranes rupture, version should be performed at once, and extraction follow as soon as the os is sufficiently dilated. Nagel considers the use of the forceps after version unjustifiable. He performed version in all grades of pelvic contractions, as it affords the fœtus a chance for life, and perforation of the after-coming head has been no more difficult than when the head presents.

In delivering such cases, Nagel relies chiefly upon external pressure upon the head through the abdominal walls. Traction should not be made upon the trunk until flexion is well established. At the moment when the head emerges undue haste is to be avoided, as children may survive after a delay of five or ten minutes.—*Dublin Journal of Medical Science.*

Tongue-tie.—Dr. Tassius, of Berlin, protests against the indiscriminate cutting of the frænum linguæ for tongue-tie, and considers that this tiny and admirably constructed organ is a correct regulator of the various movements of the tongue, and that, if the same be too hastily interfered with, the more delicate movements may be forever destroyed—a momentous fact for those destined to become public singers. He advises his medical brethren, therefore, to proceed very cautiously, and not to operate at too early an age, as much improvement may result from the advancement of general development. Only in those cases in which the frænum is so abnormally large and tendinous as to cause a fissure in the tip of the tongue may the incision be made at once, but it should be calculated almost mathematically what proportion the depth of incision should bear to the fissure. The author deprecates, therefore, the use of scissors, as not to be depended on, and advocates the employment of a small knife, the incision to be made obliquely from below upward. Where the frænum is of fleshy character, and it is, consequently, certain that the child will never gain distinction in singing or elocution—there is, according to Dr. Tassius, no cause at all for immediate interference, unless the deformity causes a real impediment. It is far better to leave such cases—at any rate, for some time—entirely to the *vis medicatrix naturæ*.—*Weekly Medical Review*, October 26, 1889.

Digitalis in Aortic Regurgitation.—Dr. Graham Steell says, in the *Practitioner*, that it has long been a disputed point whether digitalis is contra-indicated in cases of aortic incompetence or not. The chief reason assigned for the rejection of its use is the prolongation of the diastole, which the drug is known to induce. Considering the question from the practical standpoint, he unhesitatingly affirms his belief, as the result of his clinical experience, that aortic incompetence offers no contra-indication to treatment by digitalis.

Local Treatment of Syphilis.—M. Hallopeau believes that local antiseptics should be systematically used in all accessible manifestations of syphilis, as each of these manifestations should be considered a centre of reinfection. This fact is evidenced by those syphilides which first appear as a papular or an initial tubercle, and around which lesions, appear, after variable periods of time, other papulæ of which each in its turn becomes a new centre of infection. Local treatment in these cases is a powerful aid to the general treatment, and should, therefore, be employed. If a profound and energetic effect is desired, recourse must be had to the caustics, of which the acid nitrate of mercury and powdered corrosive sublimate are the most used. It is well known that acid nitrate of mercury is a powerful remedy in the case of syphilides of the mucous membrane. Specific vegetations, which have resisted many months of general treatment, disappear after one or two cauterizations.

It is the same with lingual patches and ulcerations. The fear of the pain that the application causes has often prevented its being used; but cocaine makes, to-day, the use of it almost painless. The cauterization of the mucous syphilides by nitrate of silver, which is only moderately efficacious, should be abandoned, and universally replaced by cauterization with the acid nitrate of mercury. Powdered corrosive sublimate exercises a caustic action which should be closely watched, for it should be limited exactly to the part which one wishes to reach. It can be used as a means of aborting very recent chancres if unaccompanied by adenopathies indicating the generalization of the disease; and though the attempts made in this direction have been so far unfruitful, they are few in number, and should be repeated.

The continuous application of sublimate solution of a strength varying from 1–500 to 1–2000 is of the greatest service; the diseased parts are covered with compresses impregnated with the solution, then with oiled silk; this forms a sort of permanent local bath. Not painful, and

of easy use, it constitutes one of the surest means of rapidly improving specific ulcerations. The same solutions are useful against the buccal manifestations of the disease. Ointments containing calomel and corrosive sublimate are much used; they should not be too concentrated. Excellent results have been obtained with the ointment of salicylate of mercury containing from one to twenty per cent. A valuable means of causing a rapid and energetic action on a localized manifestation is the subcutaneous injection of a mercurial preparation, but small doses only should be used. Syphilides of the respiratory organs can often be effectually combated by inhalations of vapor obtained by letting a pinch of cinnabar fall upon a red-hot shovel.

Iodoform, besides being an antisyphilitic, is, at the same time, an antiseptic, and, on this account, of great service in the treatment of fetid syphilides which develop on the vulva, anus, or the extremities. Iodoform should not be used on large surfaces where there is danger of absorption and toxic symptoms. It should be applied either in powder, as an ointment with vaseline, as a solution in ether, or, finally, in the form of gauze or Unna plasters. In the words of M. Diday: "Local treatment is always useful, it is often necessary, sometimes indispensable."—*L'Union Médicale*, October 8, 1889.

Naphthalin Injections in Cold Abscess and Chronic Adenitis.—In place of iodoform, as in injection in chronic abscesses and adenitis, Dr. Henri Lasserre advises naphthalin solution. The naphthalin is harmless, strongly antiseptic, and can be dissolved in water containing a small amount of alcohol. The following is the formula used:

℞.—Naphthalin . . . . . ʒiss.
Alcohol . . . . . f ʒjss.
Aquæ . . . . . f ʒiijss.—M.

The water should be added hot, and the whole filtered before using. Previous to the operation the bottle containing the solution should be placed in a warm-water bath, and the syringe in a warm antiseptic solution, else the naphthalin will be deposited in the canula. The pus should be evacuated, and the cavity slowly distended with the solution.—*Wiener medizinische Presse*, October 13, 1889.

Fish Poisoning.—In connection with an editorial on Fish Poisoning, in a previous issue of The Medical News, it may be of interest to note some further suggestions of Mr. Lawrence-Hamilton, as to the preservation of fish. The foundation of his advice is, cleaning and bleeding fish the moment they are taken from the water, and keeping them frozen from that time until consumed. To accomplish the latter, he advises that dry-air refrigerator steamers should be constantly on the fishing grounds to receive the fish and transport them to market. The temperature of the refrigerators should be considerably below the freezing point. In addition, the fish should be packed in peat moss, to keep them separate from each other.

[However wise the latter precautions may be, we fear they are too Utopian for us to hope that they will ever be adopted, though the gutting and bleeding of fish when caught is a simple matter, and should be insisted upon.—Editor.]

Salol has been found very effective in the treatment of slight burns, being applied as an ointment, containing three per cent. of salol, lanolin forming the base.

As an agent for preserving the teeth and gums, salol, from its antiseptic properties, has special claims on our attention. Salol has demonstrated its great usefulness as a toothwash, particularly for decayed teeth. A general formula for such a wash is: Salol, gr. xx; Tinct. cochinell, ♏ vij; ol. menth. pip., ♏ iij; attar of rose, ♏ iij; sp. vini rect. dil. ad ℈ iv.—M. Dissolve the salol in rectified spirit together with the essential oils, and then add sufficient water. Such a mouthwash leaves a very refreshing taste, the odor of salol resembling the fragrant smell of oil of wintergreen.—*The Pharmaceutical Journal of New South Wales*, September 16, 1889.

Menthol in Phthisis.—Dr. Bramwell uses, apparently with good results in some cases, the intra-laryngeal injection of oily solution of menthol for phthisis. After the method of Jamieson, he employs a ten per cent. solution in olive oil, of which about twenty drops are injected by introducing the curved nozzle of a syringe between the vocal cords. Three or four injections are made at each sitting, and repeated daily. Dr. Bramwell believes the method is of advantage in certain cases, but how wide its range of usefulness may be, he has not decided.—*Studies in Clinical Medicine.*

Hydrastis Canadensis in Uterine Hemorrhage.—Where hemorrhage complicates fibroid uterine tumors hydrastis seems to exercise a favorable effect. The fluid extract may be given in the dose of sixty to eighty drops a day in doses of twenty drops each. The tincture of the strength of twenty per cent. may be used, or a decoction of the strength of sixty per cent. A useful formula is as follows:

Fluid extract of hydrastis
Malaga wine
Syrup
} āā 2½ drachms.

A teaspoonful in coffee every two hours.—*Lyon Médicale*, October 13, 1889.

Naphthalin in Enteric Fever.—Dr. C. Sehrwald has made some bacteriological experiments in Prof. Rossbach's laboratory, from which he draws the following conclusions: 1. Naphthalin at the temperature of the room retards but slightly the development of the bacilli of putrefaction, of feces and of typhoid. 2. Naphthalin, finely powdered or in solution has its disinfecting power increased. 3. In a temperature of 98° the effect of naphthalin is much more powerful than at lower temperatures, which makes it highly probable that it is chiefly in its gaseous state that it destroys the germs. 4. Gaseous naphthalin has more effect on aërobic than on anaërobic bacilli, and more on germs cultivated in a solid medium than on those cultivated in liquid. 5. The conditions for the full effect of naphthalin are much more favorable in the intestines than in the test-glass. 6. Naphthalin added to feces decreases their germs by about one-half, but, administered internally, it first decreases them one-third or even one-quarter; after this, however, the number rises again almost to its original figure. 7. Against the bacilli of typhoid stools naphthalin is still more effective, and decreases the number of germs even to one-tenth. 8. The administration of

naphthalin should be commenced at the very beginning of typhoid fever. 9. As calomel affects some of the fecal bacilli, while others are more readily destroyed by naphthalin, it is best to give, whenever possible, both drugs.—*Lancet*, September 28, 1889.

Prevention of Pitting after Variola.—In the *Revue Médico-Pharmaceutique* for September 30, 1889, SCHWIMMER gives his treatment for the prevention of the pitting of smallpox.

The method consists in a mixture of carbolic acid and thymol applied to the skin in the parts most exposed. The formula consists in the following:

Carbolic acid . . .	60 to 75 grains.
Olive oil	1½ ounces.
Powdered prepared chalk	2½ "

If an emollient salve is desired the following may be used:

Carbolated oil . . .	1 drachm.
Olive oil	1 ounce.
Pure starch . . .	1 "
Thymol	1 drachm.
Linseed oil	1 ounce.
Powdered prepared chalk .	2½ ounces.

Schwimmer asserts that he has tried this application in no less than six hundred cases of smallpox with good results, as it prevents deep suppuration, acts as a protective, and hastens the development of the lesions.

Ointment for Acne.—

Naphthol	2½ drachms.
Precipitated sulphur . .	1½ ounces.
Black soap, Vaseline . . .	āā 5 drachms.

This is to be applied to the skin every half hour or hour, and on the following day desquamation begins and lasts for eight days.

If the inflammation is very severe a local application of oil is to be made. Lewin cauterizes the pustules with nitrate of silver.—*L'Union Médicale*, October 12, 1889.

Solution for Chronic Coryza.—*L'Union Médicale* for October 17, 1889, gives the following formula of Morell Mackenzie for chronic coryza:

Bicarbonate of soda, Biborate of soda, Chlorate of soda .	āā ¾ grain.
White sugar . . .	15 grains.

Dissolve in warm water. The solution is to be heated to 98.5° F., placed in the palm of the hand and drawn up into the nostrils in such a manner that it traverses the nasal cavities back to the pharynx. Better still, the solution may be injected into the nose by means of a syringe.

Antipyrin in Whooping-cough.—DUBOUSQUET-LABORDERIE (*L'Union Médicale* for October 10, 1889) recommends the following for whooping-cough:

Antipyrin	5 to 15 grains.
Syrup	6 drachms.
Vichy water . . .	3 ounces.

A dessertspoonful of this may be given after meals to infants of one or two years. Dubousquet-Laborderie prescribes as much as fifteen grains of antipyrin to very young children without unpleasant results, and even gradually augments the dose. Sometimes as much as from fifteen to sixty grains are given to well-grown children and adults. After the ingestion of the drug a little soup or milk may be taken.

Collyria to Prevent Hernia of the Iris.—

Eserine	⅛ grain.
Distilled water . . .	2½ drachms.

This collyria is useful in staphyloma of infants, and is to be used whenever there is danger of perforation of the cornea. After paracentesis of the eyeball for glaucoma it is also useful.—*L'Union Médicale*, Oct. 1, 1889.

Carbolic Acid in Furuncles.—The treatment of boils by the parenchymatous injection of carbolic acid solution is strongly advocated by DR. LEU, who has used the method on a large number of cases and with most excellent results. He plunges the hypodermatic needle obliquely into the centre of the swelling, and injects from one-half to one syringeful of a two or three per cent. solution, the size of the boil governing the amount used. Four injections are, according to Dr. Leu, usually sufficient rapidly to bring about resolution.—*Prager medicinische Wochenschrift*, October 16, 1889.

Empyema in Children.—In a paper read before the American Pediatric Society DR. FRANCIS HUBER advocated early operation in cases of empyema in children. Immediately before operating the exploring syringe should be inserted as a crucial test to establish the presence of pus, at the point where the incision is to be made. Pus being detected, the soft structures should be divided, layer by layer, to the extent of one and a half to two and a half inches, the index finger feeling the various tissues as they are divided. The pleura having been opened and the pus allowed to escape more or less slowly, according to the condition of the patient, the pulse being carefully watched, the largest size drainage-tube is inserted and the cavity irrigated with hot water or (1-10,000) bichloride solution. An antiseptic dressing is now applied, and changed when saturated or the temperature becomes elevated. In performing irrigation the greatest caution should be observed that a gentle stream only is employed; that the fluid be at a proper temperature, and its free escape not interfered with. It has been his practice to employ a siphon irrigator, improvised from Whitall, Tatum & Co.'s siphon nasal douche, the nozzle being replaced by a piece of glass tubing, and the vessel holding the antiseptic solution being held about one and a half to two feet above the level of the wound. The drainage-tube is secured by employing a piece of rubber bandage one and a half inches square, with a central perforation, through which the tube split longitudinally for about an inch is passed. The divided ends are then turned down and fastened to the square of rubber (acting as a shield) with small safety-pins or wire sutures, or the split portion of the tube is turned down and transfixed with a large safety-pin, no shield being used.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

Address the Editor: H. A. HARE, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, including Postage.

PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
NOS. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, NOVEMBER 16, 1889.

THE TREATMENT OF CHRONIC GONORRHŒA.

THERE is probably no subject in medicine upon which more time and thought have been spent than that of the management of chronic urethritis. With the discovery of Neisser's gonococcus as the cause of gonorrhœa, and the introduction of antiseptics into its therapeutics, there seemed to the enthusiast little doubt that at last a way had been found to shorten the duration and to limit the effects of acute urethritis, and that chronic urethritis would be less often the sequel than in pre-antiseptic days. Unfortunately this hope has not been by any means entirely realized. There are so many conditions which tend to perpetuate a urethritis, or to reëstablish it when recovery is close at hand, that it is dangerous to put our faith in any one line of treatment. In dealing with chronic urethritis the treatment that is most apt to lead to success is that which is based upon a careful, thorough examination of the diseased urethra in question. Whatever may be the pathological condition present, whether stricture, granular state of the mucous membrane, or what not, the plan of treatment adopted must be directed intelligently to it.

In the *Münchener medicinische Wochenschrift* for October 1st, is an interesting paper by DR. WILHELM FLEINER, of Heidelberg, entitled "Contributions to the Therapeutics of Gonorrhœa." After a concise review of the pathology of acute urethritis—Neisser's coccus of course occupying the prominent position—Fleiner makes particular mention of the formation of granulation tissue in the deeper layers of the mucosa, and the subsequent atrophy leading to its alteration into cicatricial tissue, and the narrowing of the urethral calibre thereby. Giving to Unna proper credit for having suggested the combination of medication with the mechanical treatment of chronic urethritis, the writer gives his entire support to the method. Unna used sounds covered with a mixture composed of nitrate of silver (1 per cent.), balsam of Peru, yellow wax, and cacao butter. In order, of course, that the medicinal agent introduced into the urethra may be effective, its vehicle must be such as to permit its intimate contact with the surface of the mucous membrane. Casper and others have claimed that lanolin fulfils this requirement, and substitute it for cacao butter and wax in Unna's formula. They claim that lanolin will take up 50 per cent. of its weight of water, and, consequently, that when the ointment comes in contact with the moist surface of the urethra, a thorough application of the active ingredient is insured. Fleiner shows that the small amount of ointment rubbed upon the sound could take up but a very insignificant quantity of moisture from the mucous membrane, so disposing of the claim made for the superiority of lanolin on that ground. A further objection that he makes to it is that the lanolin mixture does not melt readily in the urethra, and that but an infinitesimal amount of the remedy is left in contact with the diseased area.

Fleiner uses cacao butter with a small proportion of yellow wax as the basis of his mixture. Nitrate of silver is the stimulating agent he prefers. His formula is as follows:

℞.—Argenti nit.	. . . .	1 part.
Ceræ flav.	. . . .	2 parts.
Ol. theobrom.	. . . .	17 " —M.

He employs ordinary steel sounds, sizes 18 to 28. The appropriate instrument being selected, it is heated and the ointment rubbed upon its surface, or such parts of its surface as may be desired. The preparations for this method of treatment are, therefore, of the simplest possible kind. The object aimed at is the combined effect of dilatation of the urethra with stimulation of unhealthy parts of its mucous membrane. Fleiner's results are quite flattering. In forty-one cases twenty-eight were cured and eleven improved. As to the number of sittings required,

from four to six are generally necessary; on two occasions recovery followed upon one application, and in eight cases there were over ten sittings.

Nitrate of silver has always occupied an acknowledged high position in the list of remedies for chronic urethritis, but experience shows that there are many urethræ to which it is wholly unsuited, and for these Fleiner recommends that either tannin, thallin, or bismuth, be substituted in the application used.

The value of antiseptic or astringent solutions employed for irrigating the urethra, in addition to the above described measures, is not lost sight of by the writer. His claim for the results of treatment by combined dilatation and medication is most modest, and the statement is candidly made that there are some cases which will resist every kind of treatment.

It cannot be said in favor of Dr. Fleiner's method that it is in any way novel, and, in fairness to him, it must be stated that he makes no such claim. The practice of dilatation of the urethra up to its full capacity is a familiar method of treating chronic urethritis, and, as for local medication, the means for carrying it out and the agents used by different authorities are numerous. It is interesting, however, to meet with an account of such good results derived from the judicious modifications of methods already well known, although frequently far from satisfactory.

MISERABILE DICTU.

At the present time, when the power of evil legislation seems to have the upper hand, and the endeavors of the regular profession to obtain a State Medical Examining Board, have been thwarted in the State of Pennsylvania by certain opponents of professional high standing, the following abstract from the *Brooklyn Medical Journal* may carry to the public a sufficient idea of the frightful dangers which they allow to exist under the present law. It is very easy for a man, as brutally ignorant as some of these men seem to have been, to mistake the symptoms resulting from one of their poisonous doses for evidences of disease, and in this way to fail absolutely to attempt to remedy the evil which their criminal negligence has brought about.

The Virginia Board of Medical Examiners received the following answers to questions put to graduates of medical colleges, who, under the Virginia law, applied for licences to practise medicine in that State:

Describe the larynx. *Ans.* The larynx is composed of cartilage. The œsophagus passes through the larynx.

What is the function of the liver? *Ans.* Do not know.

Give tests for arsenic. *Ans.* Sulphuretted hydrogen is one. Don't know rest.

Give test for mercury. *Ans.* Do not remember.

Give dose of tartar emetic. *Ans.* Ten grains.

Give dose of sulphate of atropia. *Ans.* Hypodermatically ten grains; by mouth sixty grains.

Give dose of corrosive sublimate. *Ans.* One grain.

How would you treat placenta prævia? *Ans.* I don't know what it is.

Give dose of powdered cantharides. *Ans.* Forty grains.

What is the source of iodine? *Ans.* It is dug out of the earth in blocks like iron.

Describe dengue or break-bone fever. *Ans.* By four applicants: A fever that comes on soon after the bones are broken. By one applicant: The patient should be cautioned against moving, for fear the bones should break.

Describe the peritoneum. *Ans.* It is a serous membrane lining the belly and extending into the chest, covering the heart and lungs.

Anatomical ignorance is bad enough, but the ignorance of doses of powerful drugs is terrible in its results.

It is hardly necessary for us to point out that the doses of atropine here given are sufficient in the one case to poison over twenty men, and in the other instance to kill, perhaps, over one hundred adults. The proper punishment for the man who would order forty grains of cantharides would be the administration of the drug in consecutive divided doses, lest the one should kill him too soon.

For every candidate applying for the right to practise medicine in the State of Virginia, where the people are intelligent enough to protect themselves, fifty similar and worse dealers in human lives enter this and other States, where no examination frightens them away; and it is worthy of remark that the candidates in Virginia were not only ignorant of medicine, but were ignorant enough of their own mental state to dare the terrors of an examination. The provision of a State Medical Examining Board is not a measure to be engineered through the legislature by the medical profession. It possesses far less importance to us than to the laity, for

one doctor can generally grasp the calibre of another and protect himself. It is the people who suffer in silence, instead of protesting against such fearful homicidal practitioners. To-day the writer of this editorial read of a case where ergot was given in the early part of the second stage of labor, and yesterday he heard of a woman killed by a great, burly brute who was ignorant of the most simple form of obstetrical procedure. Yet with the perversity of human nature, the apothecary who dispenses poisons must be examined, and the man who orders the poison prescription goes unendorsed. Two means of remedying this crying evil are possible. The first, is to prevent the entrance of the money-grasping ignoramus into the sacred guardianship of life, home, and family. The other, is for the laity to inform themselves of the standing of surrounding medical schools, and refuse to recognize the degree of an institution turning out unqualified men or of one of which they know nothing. When the people become educated well enough to know when their wives, children, and those dearest to them are killed because of the employment of a miserable charlatan, then, and not till then, apparently, will an effort be made to prevent this "yearly sacrifice."

REVIEWS.

Student's Aid Series. III. Medicine. By C. E. Armand Semple, M.D. New York: G. P. Putnam's Sons, 1889.

This handbook is intended as an aid to students preparing for examination in medicine. The various diseases of special organs are briefly described with their pathology, symptomatology, and treatment.

The chief object of such manuals is to enable the student to classify and arrange his knowledge. In order the better to accomplish this all but the essential facts should be eliminated, leaving to more extensive works the discussion of abstruse questions. Absolute accuracy is, of course, one of the most essential requirements.

The author has in many instances departed from the region of known facts, without, however, following to their conclusions the theories advanced. The purpose of the book would have been much better attained had the known facts or the more plausible theories alone been given.

As to accuracy, the book is far from satisfactory. Had the author occasionally made a statement that either could not be verified, or would not have seriously misled those for whose aid the book is intended, the brevity required in a work of this character might have excused it. When such misleading statements, as are to be found throughout this book, are made, it is impossible to regard it as one that could be safely recommended to the student.

From numerous equally erroneous statements, the following examples are selected:

It is stated by the author that pleurisy is usually single, but that the disease may *extend* and constitute double pleurisy. The pulse of aortic regurgitation is characterized as dicrotous. Instead of accepting the undue prolongation of the diastole and consequently longer period for regurgitation produced by digitalis as a reason for its failure to benefit cases of aortic insufficiency, the author states that in this affection the drug may do harm by driving the ventricle into a state of contraction from which it may never become relaxed. Medullary *sarcoma* is given as a variety of carcinoma of the liver. Tincture of iodine is said to give a *brown* staining to tissues that have undergone amyloid change. Albuminous urine is said to be absent in pyelitis. "Sarcinæ is a name applied to a variety of vomiting." Idiopathic enteritis is classed as a rare disease. In describing colica pictonum, the hands are said to be generally first affected, giving from the context the impression that wrist-drop was the first symptom of lead colic. The following sentence is peculiar, "The organ (spleen) should be percussed whilst the patient is lying or standing on his right side." In regard to the treatment of laryngismus stridulus, the first statement made is, that the gums must be lanced and a warm bath used, leading the student to suppose that he should lance the gums in all cases, whether dentition were in progress or not, there being nothing in the text that could remove such an impression. Among the remote causes of apoplexy, the author gives first place to "a peculiar configuration of the body." In describing *delirium tremens*, there are given as causes: Excessive use of opium, mental exhaustion, intense study, prolonged anxiety, all causes of debility, physical and mental shock.

Some of these examples appear to express what could not have been the opinion held by the author. Nevertheless the statements are made, and the student would be unable to put any different construction upon the text.

Taken altogether, the book cannot be considered one that would be either a safe guide or a satisfactory aid to the candidate for examination.

SOCIETY PROCEEDINGS.

TRI-STATE MEDICAL ASSOCIATION OF TENNESSEE, GEORGIA, AND ALABAMA.

In pursuance to a call made during the past summer, a number of physicians from Georgia, Alabama, and Tennessee, met in Chattanooga, Tennessee, October 15 and 16, 1889, and organized themselves into a Tri-State Medical Association, to meet once a year. Having adopted a Constitution and By-laws, the association was duly organized with the following officers: *President*, J. B. Cowan, M.D., Tullahoma, Tennessee. *Vice-Presidents*, Andrew Boyd, M.D., Scottsboro, Alabama; James B. Edge, M.D., Dencork, Georgia; S. B. Barber, M.D., Tracy, Tennessee. *Secretary*, Frank Trester Smith, M.D., Chattanooga. *Treasurer*, S. B. Wert, M.D., Chattanooga.

Dr. W. L. Gahogan read a paper on

THE PHYSIOLOGY OF THE HEART AND ITS VALVES,

containing an accurate description of the minute anat-

omy, the innervation, action, and sounds of the heart, normal and pathological.

DR. G. W. DRAKE, in discussion, said the question, What makes the heart beat? has not yet been satisfactorily answered, and called attention to the importance of recognizing the difference in the nervous mechanism of the lower and higher orders of animals.

DR. JAMES E. REEVES, of Chattanooga, read a paper on

THE IMPORTANCE OF THE MICROSCOPE IN THE PRACTICE OF MEDICINE,

which was discussed by Drs. W. C. Tacones, G. A. Baxter, and J. B. Cowan, who emphasized the importance of microscopical investigations at the bedside. The paper was carefully written and well received.

DR. J. E. PURDON, of Cullman, Georgia, reported

A CASE OF FRACTURE OF THE SKULL IN AN OLD MAN, WITH RECOVERY.

The man was sixty-five years old. The interest in the case laid in the fact of recovery at such an age and from such an extensive fracture. The opening of the removed bone was three inches or more square, and located over the third frontal convolution. There was complete loss of memory of names followed by partial recovery.

The paper was freely discussed by various members. In this line, Dr. G. A. Baxter mentioned a case of anomalous distribution of the anterior branch of the middle meningeal artery, which was wounded while trephining for compression caused by blood-clot. The hemorrhage was controlled by pressure, the plug of bone being inserted. In a few days, union of bone took place, and complete recovery resulted.

Meeting then adjourned until 8 P. M.

At the night session, letters were read from Drs. Robert Battey, of Rome, Georgia, and F. W. McRae, of Atlanta, Georgia, expressing their regret at not being present.

DR. ANDREW BOYD, of Scottsboro, Alabama, presented a paper on

CROUPOUS PNEUMONIA,

in which he briefly reviewed and discussed the etiology, holding that the disease is due to a specific germ, and citing cases to prove his position. He thinks the diagnosis can only be made from physical signs, and that the rusty sputum and herpes labialis are pathognomonic. The disease runs a definite course in from seven to fourteen days. He mentioned four varieties of treatment: depletory, sedative, stimulating, and mercurial, and reasoning from analogy he concluded that the best plan is to keep down the fever and stimulate the heart.

This paper was discussed by Drs. Reeves, P. D. Sims, E. T. Camp, J. E. Purdon, and C. W. Cooper. Dr. Drake called attention to the importance of keeping in mind fibroid phthisis as a sequela of croupous pneumonia.

DR. MAX THORNER, of Cincinnati, Ohio, presented a paper on

IMAGINARY BODIES IN THE THROAT.

These were divided into three classes: 1. Cases where some object had been removed from the throat, but the sensation of the body remained. 2. Cases where the sensation was due to some pathological lesion of the throat. 3. Where neither of the above existed, but where the sensation was due to a reflex, or produced by some remote ailment, as *e. g.*, indigestion, or a pure neurosis. The treatment varies according to the state; some can be persuaded that there is no foreign body present; in others innocent deception is necessary. Pathological conditions, as enlarged tonsils or uvula, varicose veins on back of tongue, hypertrophied papillæ, or lymph nodules should be removed. The paper was discussed by Drs. W. C. Steele, N. C. Cooper, and Frank Trester Smith.

SECOND DAY.

The President appointed the following chairmen: On *State Medicine*, P. D. Sims, Chattanooga; *Meteorology*, E. T. Camp, Gadsden, Alabama; *Psychical Research*, J. E. Purdon, Cullman, Alabama; *Pathological and Practical Microscopy*, J. E. Reeves, Chattanooga; *Otology*, R. D. Boyd, Chattanooga; *Ophthalmology*, N. C. Steele, Chattanooga; *Obstetrics*, W. T. Blackford, Graysville, Georgia; *Gynecology*, R. J. Trippe, Chattanooga; *Surgery*, G. A. Baxter, Chattanooga; *Practice*, G. W. Drake, Chattanooga; *Laryngology*, Max Thorner, Cincinnati; *Experimental Physiology*, W. L. Gahogan, Chattanooga; *Materia Medica and New Remedies*, Junius F. Lynch, Chattanooga.

DR. J. A. LONG, of Long's Mills, Tennessee, read a paper on

TYPHOID FEVER.

He reported 505 cases with a death-rate of 2 per cent. The main treatment was turpentine in drop doses every hour; whether it acts as a stimulant, retards ulceration, or acts as a disinfectant he did not pretend to say.

DR. J. E. REEVES criticised the paper, questioning the statement that the death-rate did not exceed 2 per cent., and thought that all Dr. Long's cases were not genuine typhoid fever.

DR. DRAKE remarked that the paper contained the most complete pen-picture of the disease which had ever been presented to his mind; aside from some confusion in regard to infection and etiology, it merited high commendation. Much interest attaches to the paper as being the result of the observation of over 500 cases in a practice confined to one locality. Dr. Long gave his observations on his own cases without reference to text-books or experience of others. Turpentine, quinine, alcohol, milk, and home-made beef tea are the medicines and foods Dr. Drake has used in his practice.

AFTERNOON SESSION, SECOND DAY.

DR. W. C. TOWNES read a paper on

HYPNOTISM AND SUGGESTIBILITY.

DR. J. E. PURDON, of Cullman, Alabama, presented a paper on

THE SPHYGMOGRAPH AS A NEW AGENT IN PSYCHICAL RESEARCH.

Dr. Purdon claimed to have discovered the fact that psychical influence of one nervous system upon another at a distance, unconnected by any of the ordinary physiological bonds, could be demonstrated by the aid of the syhygmograph; that he had identified, in many instances, forced relationship of the pulse tracings from the fact that certain neurotic subjects had departed from their usual trace-forms to conform to those of individuals with

a more dominant nervous system. Dr. Purdon further argued that this was a first step toward the proof of psychical connection between the higher centres of different brains, which the progress of modern psychology obliges us to acknowledge. In the face of the now well-established fact of psychical communication, mind-reading, sympathetic sensibility, etc., Dr. Purdon argued against the fundamental principles of materialism by falling back upon the possibilities of the infra-conscious intelligence, and by regarding mind and matter as but different aspects of the one underlying reality.

DR. DRAKE said we had hitherto been taught that nerve impulses are confined to the individual in whose organism are contained the cerebro-spinal and ganglionic nervous systems. In Dr. Purdon's paper the startling thought was presented that nerve impulses (or nerve fluid) may escape from the body of one individual, and like electricity, passing through the intervening media, penetrate the body of another individual. When impulses from the cardiac centres of one person may pass to those of another, or to the nerves leading from them, and so control the pulse as to cause the sphygmographic tracings of the individuals to be identical, when impulses, as instanced in the cases cited, passed through prison walls and affected individuals in separate cells, this fluid must be more subtle than electricity.

As to hypnotism and suggestibility, presented by Dr. Townes, the brain centres are kept awake by impulses which flow in through the five senses, and also by thoughts and ideas from the mind. Impulses may be conducted by nerves to any or all of the brain centres, or subconscious impulses may originate in these centres. To become expert in the practice of hypnotism, it is necessary to resort to the methods of temporarily suspending or retarding the action of the brain centres. If one learns to control a normal action in the subject, by the same means he may be enabled to modify an abnormal action which is producing some functional disturbance. The method of suggestion is a species of faith-cure, and depends, in a great measure, upon the credence of the patient in the promises of the physician. Suggestibility, as Dr. Drake understood it, is a susceptibility to certain psychical influences, and may be increased by the hypnotic state.

DR. COOPER HOLTZCLAU presented a paper entitled,

REPORT OF TWO CASES OF LAPAROTOMY, WITH A SPECIMEN.

CASE I.—Female, married; aged twenty. History of pelvic cellulitis for two or three years previously, and ascites, which was tapped several times. Uterus adherent; tumor size of hen's egg, situated to the right of Douglas's pouch and rectum; pain on touch and defecation. Diagnosis, ovarian cyst. At the operation the ovaries and tubes were found adherent. The patient recovered, and is in good health.

CASE II.—Female, unmarried. In January, 1888, patient noticed a small tumor in right iliac region, which grew so large that she appeared as though at the full term of pregnancy. She also suffered from dyspnœa and irregular menstruation. Xiphoid cartilage dislocated and painful. Heart sounds rapid and weak. Diagnosis, parovarian cyst. At the operation on October 1, 1889, a large sac of fluid and colloid matter, containing two gallons, was removed. The pedicle was short. Patient was dismissed on the fifteenth day well.

DR. JUNIUS F. LYNCH reported the following case of laparotomy: Patient, aged thirty-five, an invalid for several years. Diagnosis, pyosalpinx. The sac ruptured in trying to remove it, and the contents emptied into the abdominal cavity. Some hours after the operation tympany became marked and the patient was given Epsom salts and enemata of turpentine and assafœtida, but the gas continued to accumulate. Dr. Lynch advised further operative procedure, but fortunately at this time, the fifth day, there was a copious evacuation of the bowels, and no further distention. Operation performed under strict antiseptic precautions, and patient recovered without further bad symptoms.

DR. TRIPPE reported other cases of laparotomy for cystic tumors and stab wounds.

The night session was chiefly occupied by a general discussion on the subject of hypnotism.

The meeting was highly successful in point of numbers and the amount of work done. The number of papers was not large, but the discussions were full and free.

The Association meets in Chattanooga, Tennessee, October, 1890.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Stated Meeting, June 21, 1889.

THE PRESIDENT, CHARLES T. PARKES, M.D., IN THE CHAIR.

DR. W. W. JAGGARD presented a photograph of a

CASE OF FŒTAL APLASIA,

and read an account furnished by Dr. Mansfield, in whose practice the case occurred.

The confinement in which the monster was delivered was one of twin pregnancy at about the seventh month. The mother was a multipara.

On dissection, all the tissues were found very œdematous. The feet were clubbed, and had but two toes each, great and second. The weight was ten pounds. The external genitals were female, normal. No anus was present. The right side of the abdomen and right side of the thorax were occupied by a vesicular tumor, which on dissection proved to be of spinal origin, the pedicle arising from the seventh cervical and first thoracic vertebræ. The sac was continuous with the membrane of the cord, and filled with cerebro-spinal fluid. The right arm was united to the side of the abdomen. The radius and ulna were the only bones present. The left arm was adherent to the thorax as far as the elbow. Hand clubbed, with rudimentary thumb and two rudimentary fingers. Both superior maxillæ and palate were cleft. The trachea, thymus, thyroid, lungs, œsophagus, stomach, spleen, pancreas, and liver were all absent. The umbilical vein entered the right auricle directly. The entire length of intestine was twelve inches, and at its blind end were two small, kidney-shaped, glandular organs that weighed five grains each. The kidneys were very large, one and three-quarters inches by one and one-quarter inches by three-quarters of an inch. Ureters as large as goose quills, and emptied with the intestine into a cloaca that occupied the normal position of the vagina. No trace of uterus or ovaries. Mesentery and peritoneum studded

with little bodies like miliary tubercles. On opening the skull, the membranes were found firmly united, and to them was attached a thin layer of brain substance. Cavity filled with cerebro-spinal fluid. Basal ganglia represented by about thirty grains of brain matter. No olfactory or optic nerves. Spinal cord in cervical region about one-quarter inch in diameter, and pinkish in color.

Dr. Jaggard said that the specimen, while rare, was by no means unique. It possessed many of the characters common to the acardiaci—it was the product of twin or multiple pregnancy, the placenta is single, the twin is perfectly formed and is of the same sex. On account of the presence of the rudimentary heart, however, this monster could not be referred to any one of the three types that are commonly described—amorphous, acormous, and acephalous, but appeared to represent a transition-form between the common acardiac acephali and the acranii.

THE PRESIDENT then reported the following cases of

HYSTERECTOMY, AND AN OPERATION FOR TUBAL PREGNANCY.

The first was a case of vaginal hysterectomy done some six weeks previously for persistent hemorrhage. All the usual methods had been resorted to for the purpose of controlling the hemorrhages, such as curetting the uterus, various applications, repair of the cervix, etc., without producing any effect on the bleeding or on the size of the uterus, which was considerably larger than normal. Finally, he advised her, since she had passed the forty-fifth year of her life, and was really losing her life with the hemorrhages, to submit to an operation for the removal of the uterus. A vaginal hysterectomy was performed, attended with many difficulties owing to the size of the uterus, which required much force to be delivered through the natural passage. After it was removed, the entire upper portion of the body of the uterus was found to be a mass of degenerated tissue. Microscopical examination showed it to be epitheliomatous.

The second was a case of abdominal hysterectomy for a very large tumor, which weighed about fourteen pounds immediately after removal. The case was of great interest, owing to the fact that examination of the tumor by himself and others left them doubtful whether it contained fluid or not, or whether it was a single cyst or a mass of cysts. Section through the abdominal wall showed a uterine tumor which had broken through the capsule at the upper end. It was particularly interesting, for the reason that for the first time in his experience an opening was torn into the small intestine, but none of the contents of the intestine escaped into the peritoneal cavity. The patient was in good condition till the fifth day, when she exhibited symptoms of obstruction of the bowel, and died.

A post-mortem examination was held, the incision being made in the line of the original incision. When the abdomen was opened, the distended intestines escaped. The tear was completely closed, and this portion of the intestine held gas as perfectly as the others; every suture was covered over, except at the knotted ends.

This was his fourth case of abdominal hysterectomy treated by the extra-peritoneal method, all of which had died.

The third case was one of tubal pregnancy, at about the third month, upon which he performed abdominal section. There had been quite a hemorrhage into the broad ligament. The tumor and the opening into the Fallopian tube were found without difficulty. He did not, however, find the fœtus. The tumor consisted of the remnants of the placenta and amniotic sac. All this was removed, the opening of the cavity closed, and the wound packed with iodoform gauze. The woman recovered.

The fourth case was also one of abdominal hysterectomy, or, rather, the sequel to that operation performed three years ago. Since the previous operation the patient had suffered from the fact that the lower end of the wound had not closed. Six months after the operation quite a quantity of pus was discharged, and six months ago she had a serious accumulation of pus, with septic fever. From this abscess one of the ligatures came out, two and a half years after the operation. The tumor was a large one, requiring a long incision, and the patient had quite a good-sized ventral hernia.

The recent operation was done for an opening through the remnant of the cervix, from which, by inserting a probe and turning it in the cavity of the cervix, he brought away a small amount of fecal matter. Evidently there had been adhesions between some portion of the bowel and the stump of the uterus, and sloughing and inflammation had gone on between the cavity of the bowel and the cavity of the cervix. The canal was short, so a conical incision was made through the remnant of the cervix, extending as high as possible, and the two surfaces sewed together to close the pocket and the cervical opening.

DR. E. C. DUDLEY reported

TWO CASES OF VAGINAL HYSTERECTOMY

similar to the cases reported by Dr. Parkes. The first operation was done January 9, 1889. The patient was fifty-eight years of age. The subjective symptoms were frequent and very profuse flowing, with intervals of free muco-purulent leucorrhœa, during the previous sixteen months.

Examinations of repeated scrapings from the endometrium failed to show anything except adenoma, but it was decided to remove the uterus on suspicion. Just before the removal, however, Professor Frank Johnson, after having examined a large number of slides, discovered unmistakable evidence of cancer. After the removal of the uterus, this cancer was microscopically proved to extend almost through the fundus uteri.

Although the patient had suffered for years from a ruptured and relaxed perineum, the perineum was divided to get more light and space for isolation of the broad ligaments. Immediate closure of the perineum thus divided resulted in perfect union. Four weeks later the patient had trouble in walking, from sagging of the pelvic floor, from cystocele, and from rectocele, and requested perineorrhaphy.

Upon examination, a small, soft, friable protuberance in the perineal scar caused Dr. Dudley to fear a return of the disease at that point. Consequently, after thorough disinfection of the vagina and external genitals, the growth was excised with a wide margin of healthy

tissue; the operation was completed as a perineorrhaphy. Upon examination of this little growth Dr. Johnson declared it to be a carcinoma.

The question arises, whether this was the result of metastasis, a transplantation, or an independent growth. It could hardly be metastatic, because the vessels do not run in that direction. If it were an independent growth, it is probable that the conditions which produced it would have been active in other parts before this time. More probably it was a transplantation during the operation. This speaks strongly for scrupulous care in the cleansing of all wounds after the removal of cancer.

The second hysterectomy was on March 22, 1889. Before the operation, the microscopic examination by Dr. Johnson, and the subjective symptoms, were essentially the same as in the previous case, except that the microscopic evidences from repeated scrapings showed nothing more than adenoma. The uterus was removed on suspicion.

The following is Dr. Johnson's report of the post-mortem examination:

"Cavity of body partly filled by a mass of outgrowing mucous membrane, consisting of long, slender villi.

"*Microscopical Examination.*—The villi covered with columnar epithelium.

"At the base of the new growth are found a few nests of cells not conforming to the gland type, but are irregularly shaped masses of polygonal epithelial cells packed closely together.

"In one specimen, a mass of lymph spaces in the uterine tissue at some distance from the bases of the villi, is seen packed with epithelial cells similar to those last mentioned.

"*Diagnosis.*—Villous adenoma, beginning carcinoma."

The patient recovered, and at the present time has no return of the disease,

Permanent hæmostasis and closure of the peritoneal wounds were secured by means of lock forceps.

OVARIOTOMY.

Dr. Parkes then read the notes of a post-mortem held on a patient presented to the Society in March, 1884. The case was one of ovariotomy complicated by miliary tuberculosis. From the time of the operation to her death there was a constant discharge from the old wound.

"The abdomen was flat, and on section the viscera appeared normal.

"Liver normal in size; slightly fatty (pale and mottled). Spleen, fully three times its normal size; very firm; amyloid. Right kidney nearly twice the normal size; capsule non-adherent; cortex twice the normal thickness; surface beneath the capsule is slightly paler than normal, and mottled. Microscopical examination was not made. Left kidney is represented by a large cyst, occupying the greater portion of the left half of the abdomen. Contents, cheesy, straw-colored fluid. The cyst wall formed by the capsule of kidney somewhat thickened, and in a few places thin remnants of kidney parenchyma are found upon the inner surface. The cyst is sacculated: the pouches seemingly correspond to the original calices of the pelvis. The left ureter is embedded in a mass of cicatricial tissue (site of old operation for suppurating dermoid cyst of the left ovary).

"*The Abscess.*—The external opening in the abdominal wall is in the median line about an inch below the umbilicus. The finger passes downward in the median line behind the pubic bones; from there downward and backward about two inches, also to the right, along the brim of the pelvis. Near the external opening is a communication with an inner sac, situated within the pelvis and projecting upward into the right iliac fossa. At the point of communication between the outer and inner sacs, the colon is adherent and opens into the abscess in such a way that the finger may be passed from the outer sac into either the colon or the inner sac. (The remainder of the head of the colon, the ilio-cæcal junction, and the vermiform appendix are normal.) The inner sac has thick walls. It is covered in front by peritoneum. The cavity is somewhat larger than a goose egg; the inner surface is irregular, in ridges and elevations, and is gangrenous. Beside the sac, no trace of ovary can be found on the right side. Left ovary absent; uterus small, atrophic; bladder contracted; alimentary canal, with exception of caput coli, normal."

Dr. Parkes referred to Kaltenbach's seven cases of vaginal hysterectomy for what he calls corpus carcinoma, or malignant adenoma, originating in the mucous membrane of the body of the uterus. Kaltenbach removed the uterus because all other methods of controlling hemorrhage had failed, and in all of these cases he found the same degeneration, commencing about the Fallopian tubes and spreading up over the fundus to join in the median line.

Dr. Dudley said that the question sometimes is, whether the uterus, or the ovaries and tubes, should be removed in a case of intractable uterine hemorrhage. If scrapings from the uterus prove to be adenoma under the microscope, and yet return promptly after removal, then he would fear carcinoma, present or prospective, and should be disposed to remove the uterus. If, on the other hand, it be not possible to get much out of the uterus by repeated curettings, the probability is against carcinoma as a cause of the hemorrhage, and the removal of the appendages would be preferable to removal of the uterus. The malignant tendency of adenoma—that is, its disposition to eventuate in cancer—is abundantly shown by the observations of Breisky, Schroeder, Winckel, and others.

Dr. Parkes said this latter fact was important to remember in all cases of enlargement of the body of the uterus.

Dr. Dudley believed that the enlargement of the uterus might be from myoma; in that case, the hemorrhage would be relieved by removal of the appendages. But if scrapings from the interior of the uterus show adenoma, be the uterus large or small, the patient may be losing valuable time until the uterus has been removed.

Dr. Parkes thought that pathologists required a full history of a case before making a diagnosis.

Dr. Holmes said that the recognition of typical carcinoma was easy enough; but if a surgeon removed a portion of tissue half the size of a pea, and presented it to a pathologist for examination, it was presumptuous to suppose that the pathologist could examine that minute fragment and decide by it whether the uterus contained carcinoma or not. A proper diagnosis depends as much upon the operator who removes the tissue as upon the pathologist.

DR. DUDLEY believed that the uterus need not be much increased in size to be carcinomatous. In the first of the two cases just reported, the uterus was not very much enlarged, but carcinoma was unmistakable.

DR. J. T. WATKINS presented an inaugural thesis, entitled

CONCENTRATED SOLUTION OF MAGNESIUM SULPHATE AS AN ENEMA, WITH SOME POINTS RELATIVE TO THE PHYSIOLOGY OF THE ABDOMINAL CIRCULATION.

After reviewing the literature, and reporting a number of cases in which the enemata had been used, he summarized its advantages as follows:

1. Its action is local.
2. It seldom fails, and produces copious stools.
3. The time of action is short.
4. The bulk is small, causing but very little, if any, discomfort to the patient.
5. It is as unirritating as a simple enema.

Its certainty of action has become so well recognized in the New York Woman's Hospital that it has been used in nearly all the operative cases, as the cathartic preparatory to operation, for the last six months.

It is best administered with the patient in Sims's position, the hips being elevated by a pillow; and when much tenderness exists, it should be given through a large rubber catheter passed well up into the bowel. The patient is to be instructed to allow the abdominal muscles to remain lax, and, if necessary, the nurse is to keep up pressure over the anus, to cause it to be retained for at least fifteen or twenty minutes. If the bowel should fail to expel the exuded liquid, a rectal tube should be inserted to allow its escape. Two ounces have been retained, without bad results; but Christison reports a case of death in a boy ten years old, where two ounces were taken by the mouth without being followed by purging. Where it is retained, the sphincter ani is likely to be strongly contracted, and great relief will follow forcible dilatation under an anæsthetic, which will also have a good effect upon the chronic constipation usually present.

The following is the formula he uses:

℞.—Magnesii sulph.	2 oz.	
Glycerine	1 "	
Aquæ . . . . q. s. ad	4 "	—M.

The solution is made more readily, and its power of diffusion increased, by the addition of glycerine. He has used three and four ounces of the salt, but does not see that it has any advantages over the smaller amount.

DR. J. H. HOLLISTER presented a paper entitled

NOTES ON ACUTE INVERSION OF THE UTERUS,

in which he said that the uterus, whether gravid or unimpregnated, may become partially or completely inverted as an obvious result of enlargement or *distention* of the organ. This may result either from the development of a fœtus or from the growth of a tumor in utero. In a uterus thus distended, he was convinced that inversion would not occur spontaneously—that is, from simple rhythmical contraction of its own muscular structure. It seemed more probable that *force* must be applied to the fundus to accomplish its inversion. This might occur independently of any manipulation by an attendant, by a simple gravitation of a pendulous tumor or by an adherent placenta, which may be partially discharged into the vagina, and, being adherent, drag a distended fundus after it. A more obvious, and, doubtless, more frequent, cause for such displacement is that of undue traction upon the umbilical cord while, as yet, there has been but partial detachment of the placenta. This last might be associated with undue pressure upon the fundus at its superior portion, applied by the hand upon the abdominal walls

The inversion commences by an infolding of the fundus more and more into the uterine cavity, the advancement of this involution to the cervix, then through the os into the vagina, and, when completed, the organ emerges through the vulva and hangs as a pendulous pyriform tumor.

The striking similarity which occurred in two cases which he had carefully examined, led to the conclusion that when the uterus is thus completely inverted the os is no longer discernible, but that in its place there is an inverted cervix, giving a band-like feeling and easily distended.

While the uterus remains in this state, there seem to be two important conditions present:

The first is the entire loss by the organ of the power of either rhythmical or tonic contraction. The function of sensation seems also arrested, for his patients were unconscious of pain from simple pressure or manipulation of the organ.

The second marked feature in each of his cases was this: after complete inversion, there was almost no hemorrhage from the uterine walls, and it was only after reduction had been nearly accomplished that hemorrhage became troublesome.

He believed it to be an exceedingly rare accident in labor.

The histories of the two cases under his personal observation were as follows:

CASE I.—Mrs. P., American, aged twenty-four years, well formed, spare in figure, in moderately good health, and of active habit; married one year. At her first confinement the patient was in labor ten hours, and gave birth to a healthy, well-formed babe weighing eight and one-half pounds. There was no unusual hemorrhage.

He was confident that he did not exert undue pressure upon the abdominal walls, nor did he detect *partial* involution. With some degree of traction upon the cord, still the placenta was not delivered. Holding the cord with moderate tension in his left hand, the vagina was explored with the right, and the placenta found partially protruding through the os. Gathering this more and more into his hand, and using considerable traction, it gradually descended, until suddenly it protruded in a large mass external to the vulva. In endeavoring to remove the placenta, it was found adherent to a tumor half as large as the infant's head, and pyriform in shape.

A portion of the placenta—apparently as large as the palm of the hand—adhered so firmly to the uterine wall that it required to be picked away, segment by segment, with some degree of force. During this process of separation there was almost *no* hemorrhage, showing that in this condition, by compression, the supply of blood to the uterus had been nearly cut off.

Dr. Shepherd, of Grand Rapids, was then called in, who drew the organ out as far as safety would permit, and by digital manipulation commenced the evolution of this

inverted organ. He was able to accomplish this, to a considerable extent, while the uterus was still external. Next, inserting the end of a round ebony rule an inch in diameter into the indented fundus, and still holding the cervix as securely in his left hand as possible, he gradually accomplished the reduction, and, as the fundus receded in the upward direction, carried it more rapidly upon the point of the instrument fully up to its normal situation. In a few moments the outline of the womb could be detected above the pubes; it again resumed moderately strong rhythmic contractions, and the patient made a good recovery without any untoward symptoms, and was afterward the mother of other children.

Case II.—Mrs. G., American, aged twenty-five years; housewife, moderately spare in habit; married, and first confinement. Dr. Hollister was called by Dr. J. H. Bates, of Chicago, to see this case in consultation, in 1888.

The confinement had been one of moderate severity, but not at all complicated.

Upon lifting the placenta from the vulva, Dr. Bates discovered the projecting pyriform tumor of an inverted uterus.

Involution was effected, as in the preceding case, but the uterus had not recovered its power of contraction, and pretty severe hemorrhage began. Friction over the abdomen failed to induce uterine contraction, and no outline could be discerned through the abdominal walls. In this emergency, a lump of ice twice as large as a hen's egg was wrapped in a handkerchief and carried into the uterus, when almost immediately rhythmical contractions began. Soon they were more and more established. The hand was gradually withdrawn, with the clots and ice, as the uterus closed down upon it. A few minutes later the uterus had accomplished normal involution. Its natural contour and position were evident by palpation above the pubes externally. The hemorrhage had nearly ceased; the hand was withdrawn with the ice nearly melted; the vagina cleansed of coagula: the crisis was passed, and, though the patient had lost considerable blood, she did not seem unduly exhausted, and the heart action was satisfactory.

He had been informed later by Dr. Bates that, though he had enjoined the utmost care as to over-exertion of any kind, when he made his visit on the fourth day after her confinement, at an unexpected hour, she was sitting at table with her family and serving the tea.

Dr Dudley asked if the placenta should be removed before reducing the inversion. The reason he asked the question was because contraction of the uterus while it is inverted is not favorable to replacement, and handling the uterus as much as one would need to, in detaching the placenta, might make it contract, and increase the difficulty of replacement; consequently it has been the practice of many to replace the uterus with the placenta still attached.

Dr. Parkes said that he would certainly expect, with a placenta as large as that body usually is, it would increase the difficulty of returning the uterus with the placenta in position.

Dr. Doering believed that if we use any traction at all on the cord in delivering the placenta, one hand should hold the uterus firmly, so that the slightest inversion could be detected.

Dr. Parkes said that in listening to this paper, and the criticisms that had been made upon it, it would be well to bear in mind the fact that the uterus may become extruded without any asssistance on the part of the physician, and cited such a case that had occurred in his own practice.

CORRESPONDENCE.

THE CAUSES OF CHLOROSIS.

To the Editor of The Medical News,

Sir: In the first part of my paper on the "Relations between Chlorosis, Pernicious Anæmia," etc., published in The Medical News of October 5th, I have somewhat misrepresented the views of Dr. William Hunter, of Cambridge, England. It is almost superfluous to say that this was done through inadvertence, as my admiration for his excellent work is freely expressed in the paper referred to. The misstatement to which I allude is, that Dr. Hunter attributes the defect in hæmogenesis in chlorosis "to a cadaveric poison which destroys the iron contained in the food we eat."

After consulting Dr. Hunter's papers in the *Practitioner* and *Lancet*, I find that he does not attribute the cause of chlorosis to any single hypothetical ptomaine, but to an "excess of decomposition-products in the intestine." Of course, the organic iron of the food—the hämatogen of Bunge—is not actually "destroyed" in chlorosis, but is practically so, for all nutritive purposes.

I make these corrections with pleasure, and do not think they weaken my argument in favor of the cognate characters of chlorosis and pernicious anæmia. According to Hunter, in chlorosis the organic iron of the food is destroyed in the intestinal tract by one or more products of decomposition; and, in pernicious anæmia, the organic iron of the red corpuscles, or these bodies themselves, is destroyed in the portal circulation by one or more products of decomposition. In both cases, products of decomposition are made responsible for the anæmia, thus, it seems to me, bringing chlorosis and pernicious anæmia into a relation more or less intimate.

I am, however, quite open to the conviction that pernicious anæmia is the result of excessive hæmolysis, and not, as I now hold, of defective hæmogenesis, and know of no one so likely to convert me as Dr. William Hunter.

Frederick P. Henry, M.D.

THE RADICAL CURE OF HAY-FEVER.[1]

To the Editor of The Medical News,

Sir: I am pleased to find that my communication on "The Radical Cure of Hay-fever with Chromic Acid" has attracted sufficient attention to raise a suspicion of an apparent weak spot in its argument. Ordinarily, conclusions founded on a single particular are properly regarded as unstable, not on account of inherent logical necessity, but on account of the difficulty of confining consideration to the net question at issue. Especially is this true in medicine, where the complexity of causes and effects is such that generally the only practicable method of reasoning is by the collection of a large number of kindred cases, the rejection of all evident irrelevancies, and

[1] This letter was received in time for the issue of November 9th, but was unavoidably delayed in publication.

the elimination of the non-obvious possibilities of confusion by the application of statistics. The result of all this is an approximate truth. But, given conditions which facilitate observation and eliminate confusing causes, a more accurate conclusion is reached without such circumlocution, and these are the conditions presented by the case in question. A sufferer from hay-fever in a severe form for twenty-two years undergoes, with plenty of hopefulness and patience, every form of medical and surgical treatment recommended by eminent specialists, and receives a modicum of "enduring benefit" disproportionate to the sufferings from the treatment, among which sufferings the pain produced by applications of "carbolic acid to nearly all parts of attainable nasal mucous membrane" was preëminent. The chromic acid treatment, on the other hand, in a few weeks causes the subsidence of the disease, during the period of its ordinarily maximum severity, with little pain and with no assistance from expectant attention. The patient and surroundings being the same, the confusing causes are cancelled, and the change in result stands coupled with the change in treatment by a canon of logic.

I much regret that the spirit of Dr. Robinson's letter should oblige me to disclaim any quest for priority, a motive none the less discreditable to a liberal profession because so common in it. The sole motive for the communication was to induce others to try a treatment which had succeeded on apparently rational grounds in a case where everything else had failed. Furthermore, the method was not vaunted as a panacea for the loosely related group of affections popularly known as hay-fever, but its range of usefulness was marked out with tolerable distinctness. The shade of dogmatism characterizing the article was chosen in order to lead competent observers to test for themselves a treatment which had been singularly successful, and I sincerely trust that I have not given the matter a coloring which will raise a causeless prejudice among specialists, or induce others unfamiliar with the intricacies of the nasal chambers to run risks which are best avoided by employing or carefully watching the patient's sensations. A. H. L.

NEWS ITEMS.

Obituary.—Dr. ISAAC E. TAYLOR died suddenly of pericarditis in New York City on October 30th, in his seventy-eighth year. He was very prominent thirty years ago in carrying out the medical reforms which took place in connection with the administration of several charitable institutions, chiefly Bellevue Hospital and those on Blackwell's Island. He was one of the earlier members of the New York Academy of Medicine and a member of the first Faculty of Medicine in Bellevue Hospital Medical College and Consultant to five general and special hospitals. In 1887 he was President of the New York State Medical Society. Dr. Taylor graduated from the University of Pennsylvania, in 1834.

A Fire during the French Surgical Congress.—During a meeting, held October 7th, in the amphitheatre of the Faculty of Medicine in Paris, a fire broke out which necessitated the immediate adjournment of the meeting. The damage wrought by the fire amounted to nearly $6000, and pictures, hangings, tapestry, and furniture were all considerably damaged.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 5 TO NOVEMBER 11, 1889.

By direction of the Secretary of War, ROBERT M. O'REILLY, *Major and Surgeon*, will, at the expiration of his present leave of absence, proceed to Fort Logan, Colorado, and report in person to the commanding officer of that post for duty.—Par. 6, *S. O. 256, A. G. O.*, November 2, 1889.

MERRILL, JAMES C., *Captain and Assistant Surgeon.*—Is relieved from duty at Frankford Arsenal, Pennsylvania, and ordered to duty at Fort Reno, Indian Territory.—Par. 6, *S. O. 256, A. G. O.*, November 2, 1889.

BLACK, CHARLES S., *Captain and Assistant Surgeon.*—Is relieved from duty at Fort Sidney, Nebraska, to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer Fort Du Chesne, Utah Territory.—Par. 6, *S. O. 256, A. G. O., Washington*, November 2, 1889.

JOHNSON, R. W., *Captain and Assistant Surgeon.*—Is granted leave of absence for one month, to take effect on or about November 10th proximo.—Par. 4, *S. O. 40, Department of Arizona, Los Angeles, California*, October 29, 1889.

By direction of the Secretary of War, leave of absence for two months, on account of sickness, with permission to leave the Division of the Missouri, is granted JUNIUS L. POWELL, *Captain and Assistant Surgeon.*—Par. 2, *S. O. 258, A. G. O., Washington*, November 5, 1889.

MACAULAY, C. N. B., *Captain and Assistant Surgeon.*—Is granted leave of absence for one month, to take effect about the 29th instant.—Par. 2, *S. O. 166, Department of the Missouri, Fort Leavenworth, Kansas*, November 8. 1889.

IVES, F. J., *First Lieutenant and Assistant Surgeon.*—Is granted two months' leave of absence.—Par. 3, *S. O. 256, A. G. O.*, November 2, 1889.

By direction of the Secretary of War, the following assignments of officers of the Medical Department (recently appointed) are ordered:

CHARLES WILLCOX, *First Lieutenant and Assistant Surgeon.*—Will report to the commanding officer at Fort Columbus, New York, for duty at that station.

HARLAN E. MCVAY, *First Lieutenant and Assistant Surgeon.*—Now at Fort Mackinac, Michigan, will report in person to the commanding officer of that post for duty.

EUCLID B. FRICK, *First Lieutenant and Assistant Surgeon.*—Will proceed from Philadelphia, Penna., to Fort Keogh, Montana, for duty at that station.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING NOVEMBER 9, 1889.

MACKIE, *Surgeon.*—Detached from the U. S. S. "Ossipee," and placed on waiting orders.

PICKERILL, GEORGE MCC., *Assistant Surgeon.*—Detached from the U. S. S. "Ossipee," and placed on waiting orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM OCTOBER 19 TO NOVEMBER 9, 1889.

PURVIANCE, GEORGE, *Surgeon.*—Granted leave of absence for twenty-one days, November 8, 1889.

AUSTIN, H. W., *Surgeon.*—To inspect unserviceable property at St. Louis Marine Hospital, November 4, 1889.

GASSAWAY, J. M., *Surgeon.*—Relieved from duty at New Orleans, La. To rejoin station at Cairo, Ill., October 23, 1889.

BANKS, C. E., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, October 28, 1889.

STONER, J. B., *Assistant Surgeon.*—Ordered to Vineyard Haven, Mass., for temporary duty, November 6, 1889.

CONDICT, A. W., *Assistant Surgeon.*—Ordered to Cairo, Ill., for temporary duty, November 4, 1889.

ton, D. C., for temporary duty, November 8, 1889.

GUITÉRAS, G. M., *Assistant Surgeon.*—Ordered to Washing-

GROENEVELT, J. F., *Assistant Surgeon.*—Ordered to New York, N. Y., for temporary duty, November 5, 1889.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, NOVEMBER 23, 1889. NO. 21.

ORIGINAL LECTURES.

CARTWRIGHT LECTURES.

Delivered before the Association of the Alumni of the College of Physicians and Surgeons, New York, November 14, 1889.

BY JOHN S. BILLINGS, M.D.,
U. S. ARMY.

LECTURE I.

ON VITAL AND MEDICAL STATISTICS.[1]

I PROPOSE in these lectures to speak of vital and medical statistics, and of some of their relations to each other and to scientific and practical medicine and sanitation. The discussion will include such points as, character of the data required, methods of obtaining them by the census, by registration, and in other ways; relations of physicians to this kind of work, methods of compilation and forms of publication, the best existing sources of such data, and some of the more common fallacies in drawing conclusions from the data as ordinarily published.

These and other points will be considered in their practical applications to certain questions which I hope may be of interest to you, as, for example: Is the average longevity of man in civilized countries increasing? What data are required to judge practically of the relative healthfulness of different localities, or of the same locality at different times? What are the relations of certain forms of disease to race, to climate, to locality, to occupation? What is the relative tendency to increase of population in this country in the white and colored races? What is the statistical evidence with regard to improvement in practical therapeutics as derived from hospital data, from death-rates in obstetric practice, etc.?

Statistics, and discussion of statistical methods, are, as a rule, dry and uninteresting subjects, and it is with very considerable doubt and hesitation that such a topic has been selected for these lectures. I have no new discoveries to announce, and those who are practically familiar with statistical research will find some of my statements rather elementary; but the subject is not one which lies within the ordinary range of medical studies; the data are widely scattered in literature, and I hope at least to be able to remind you of some of the numerous points which you may have once known, but which may have been forgotten owing to the pressure of other studies and duties.

Circumstances have made it necessary for me to endeavor to ascertain the character and amount of the statistical data which have been published, and which are available for those who wish to make special studies of the relative frequency of certain diseases, deformities, or disabilities; of their causes and results, especially as to mortality; or of the relations which exist between disease and death, and such conditions as sex, age, race, soil, climate, occupation, etc., and in the course of this investigation it has seemed to me that many physicians are not as familiar with statistical methods and with existing sources of information relating to vital statistics as it is desirable that they should be to enable them to judge properly the value of the arguments and conclusions presented by those who make use of such data, even though they themselves may have no desire or intention to use statistical methods of research.

There are many fallacies and errors connected with vital and medical statistics as ordinarily collected and used, and it is highly desirable that the physician should be aware of the more important of these, since he is constantly appealed to for decisions as to their true significance and value. "It is as easy to tell lies with figures as with words, and bigger ones;" but while we occasionally meet with deliberate falsifications of the records, made for the purpose of magnifying or diminishing the apparent mortality or prevalence of a particular disease in a given locality, or to maintain an anti-vaccination thesis, these are not so frequent as are the errors of involuntary misstatement and misinterpretation into which those not familiar with methods of collecting and tabulating statistics are so liable to fall.

My experience with those seeking statistical data is, that the majority begin by looking for data which are in favor of some particular conclusion with which they commence, rather than by selecting data with reference to their probable completeness and accuracy, and accepting the conclusions which may be legitimately drawn from them, whatever they may be.

Those who are engaged in the collection and compilation of official mortality and vital statistics are often at first the most sceptical as to their accuracy and utility, for their attention is so frequently and forcibly drawn to errors in the individual data that they conclude that the whole mass is unreliable, and the difficulties in the way of obtaining complete and reliable figures are seen to be so great that they incline to give up the whole matter in despair. Continued study of the subject, however, shows that many valuable conclusions or suggestions can be derived from imperfect data, and that in large masses of figures the errors either tend to neutralize each other, or to produce a constant effect in one direction which can be calculated and allowed for, so that those who have had the greatest experience are most convinced of their value. It is true that, in statistics, the inferences cannot be more accurate than the data on which they are founded, but we do not look for scientific exactness from them so much as for an estimate of probabilities.

[1] Properly speaking, there is no such thing as the science of statistics in the sense in which that term is used by French and German writers, but there is a method of statistical analysis which may be applied in a number of fields of science, and which is essential in the study of sociology.

The methods which we have for advancing our knowledge of the laws of human life, of the causes of abnormity, disease and death in man, and of means of sanitation or therapeutics, may be grouped into two classes, viz.: observation and experiment, which, however, are often combined.

In the experimental method we seek to make a direct test of the variation of one particular condition, or set of conditions, upon the living organism, all other conditions being kept uniform as far as possible. Some such experiments can be made on man, but the greatest number of the problems which we may hope to solve by this method, and among these the most important, can only be approached by experiments on the lower animals. Within the last twenty years, experimental physiology and pathology have made great advances, and these methods, so far as they are applicable, give more definite results, and are more immediately satisfactory, than those derived from comparison of observations in which no definite experimental variations have been made; but so far as regards causes of disease, or the action of supposed methods of prevention, or of remedies, it is unfortunately the case that we cannot draw accurate conclusions as to what will happen in man from what is observed to happen in animals. In the first place, there are many important forms of disease in man which cannot, with our present knowledge, be experimentally produced in animals, and which rarely or never occur in them.

For example: Yellow fever is a disease which, from analogy, we have every reason to believe is due to the action of one or more specific microörganisms, or, perhaps, I should say, to the products of such organisms. We find a dozen different kinds of bacteria in persons suffering from yellow fever, and, by dint of much labor, these have been isolated and cultivated outside the human body. The problem is to determine positively, and with scientific precision, which, if any, of these is the true essential cause of the disease. The mode of doing this is by producing the disease in a perfectly healthy person or animal by the inoculation of the suspected organism. But, thus far, we have failed to find any animal in which a disease, which can be considered as specifically identical with yellow fever, can be produced by any method; and I need hardly tell you that inoculations of such a disease as this in a human subject, under conditions which would make the results of such inoculation scientifically trustworthy, are impracticable and unjustifiable.

Those forms of disease which are common to animals and man, such, for instance, as anthrax, tuberculosis, tetanus, hydrophobia, the ordinary forms of suppuration, and, possibly, also typhoid fever, are being pretty thoroughly worked out by means of such experimental inoculations as I have just referred to; and we are able to say, with a great degree of precision, not only that these diseases are due to specific forms of bacteria, but to determine enough of the characteristics of these forms to be able to identify them wherever they are found.

For the great majority of diseases, however, this experimental method of determining the causes, and, therefore, necessarily, experimental methods of prevention and treatment, cannot be employed in such a way as to isolate distinctly the effect of the particular agent or circumstance which we are investigating, and we must therefore resort to the other mode of advance of knowledge which has been referred to, namely, that of observing the phenomena as they occur in man, and endeavoring so to group the results of these observations as to determine the influence of a particular condition or set of conditions while all other circumstances remain uniform.

This method of observation may, for our purposes, be again divided into two categories. The first is that which is used in individual cases, being the form applied by the physician to each case which he has to treat. It also includes the sort of investigation which may be made in a single household, a small community, or a thinly populated district to determine the course and cause of a particular form of endemic or epidemic disease, where the conditions affecting each family or dwelling can be studied in detail. By the combination and comparison of detailed studies of this kind, the greater part of our present system of diagnosis, prognosis, and therapeutics has been evolved; but it has been and will be a slow process, for each man differs from every other man in structure and mode of function, and the conditions of the environment are so multiform, and so variable in space and time, that "experience is doubtful, and judgment difficult." We must, therefore, try to supplement the information thus obtained by that derived from the second kind of observation above referred to, namely, that of collecting a few data with regard to great numbers of people, especially where these are accumulated in thickly settled localities, forming what is called the statistical method as applied to different communities. By the first method we compare individual with individual, and do so with considerable minuteness of subdivision of the conditions studied; by the second method we compare the vital phenomena of communities with those of other communities, but only on broad lines and in relation to circumstances easily noted.

The object of vital statistics is to classify and arrange the facts relating to the quantity and character of human life under different circumstances, for the purpose of determining the effect upon it of each of these circumstances taken singly, or of two or more of them acting together. The results thus obtained form an important part of the scientific foundations of sociology, of political economy, and of preventive medicine. It deals with masses of men and not with individuals, and its conclusions are, for the most part, applicable only to large bodies of people; yet its data are derived from individual records, and its results are accepted in many cases as a sufficient guide for individual action. They do not, in this respect, differ essentially from most of the motives which actuate us in daily life. The farmer sows his seed, the manufacturer builds his mills, the physician writes his prescriptions, and you come to hear this lecture from motives of probability, not carefully formulated in most cases or capable of expression by a formula, but, nevertheless, in accordance with the doctrine of chances as determined by previous experience.

The term "vital statistics," in the sense in which I use it in these lectures, corresponds almost precisely to the French term "demographie" or the German "demologie," being applied to the circumstance of human life only in the sense of Korosi's definition that it is the science of the physical life of human society. We will first consider briefly the sources of information and the character of the original data available for this study;

second, the methods of arranging and using these data; and, third, the value and applicability of some of the conclusions which may be drawn from them, especially in that branch known as medical statistics.

The essential data of vital statistics are derived from enumerations of the living population and from records of births, marriages, and deaths.

The numbering of the people is effected by a census, a term derived from the Roman Censors, a part of whose duty was to make such counts. Such enumerations were made by Moses (1490 B.C.), David (1017 B.C.), in Greece, 650 B.C., and in Rome beginning 566 B.C. In modern times the first country to make a count was Sweden in 1749. The first census in the United States was taken in 1790 as a necessary means of carrying out the constitutional provision that the basis of representation for the several States should be the number of the population in each. The first census in England was taken in 1801, and showed the number of persons, with distinction of sex, the number of houses, the number of families, and a rough statement of occupations under the general classification of agriculture, trade, manufactures or handicraft, and all others.

The first satisfactory English census, giving distinction of age, sex, occupation and birthplace, the number of persons blind and deaf and dumb, was the census of 1851. This was the first census whose data could be used in connection with the general system of registration of births and deaths.

The first attempts to take a census in a country have usually excited more or less suspicion and opposition, from fear that the information obtained would be in some way used to oppress the people. For example, several attempts to take a census have been made in Hayti, but have always given rise to insurrection, and have always been defeated, owing to the belief of the people that it would in some way lead to their losing their liberty.

In the first censuses the object was to determine the number liable for military service or qualified to vote, or to fix rates of taxation, and the records were very brief. In the first United States census the only data called for on the schedules were, names of heads of families, free white males over sixteen, free white males under sixteen, free white females, all other free persons, and slaves.

The record of age was first made in the English census in 1821, was omitted in 1831, and resumed in 1841. As the census records came to be more and more relied upon as a basis for legislation, additional details were introduced, until at the present time we have such records from some of the principal countries of the world.

The relative importance of each of these details in studies of vital statistics varies greatly according to the purpose to which they are to be applied; but to physicians, sanitarians, and those interested in life insurance, the dominating factors are age, sex, and race. The power of reproduction, the tendency to death, and the liability to certain forms of disease, vary greatly at different ages of the two sexes, and this gives rise to corresponding variations in the disease, and death-rates of populations of different localities, or of the same locality at different times, when those populations differ as to the relative proportion of young and old or of male and female which they contain. These variations we must ascertain if possible, and estimate the influence of, in order to make reliable and useful studies of the effects upon human life of climate, altitude, race, occupation, or other conditions of the environment. In the course of these lectures I shall often have occasion to refer to this dominating influence of age, and to point out errors due to neglect of this factor, which is by no means an easy one to determine for many places at many times. Even the census data require corrections, since people do not give their ages accurately to the enumerators. The tendency is to answer in round numbers, as 20, 30, 40, etc., and to a less but still marked extent, as 25, 35, 45, etc.; but the effect of this can be done away with to a considerable extent by properly grouping the individual data, as I shall explain presently. Ages over 90 are largely overstated, and the ages of women between 25 and 50 are largely understated; but those errors being comparatively constant, and influencing the data of all communities, do not lead to erroneous conclusions of importance in comparing different communities, if the distinction of sex be observed.

One of the most interesting fields of study in vital statistics is the relation of race and color to birth-rate, to certain forms of disease, or to the liability of death at certain ages.

This country is, as you know, the great mixing ground for different races of the human family, and, while the mixture is rapidly becoming so intricate as to make it impossible to distinguish the several strains, it is still true that there are large groups of men of quite distinct races, the record of disease and death in which would form valuable material for study upon this point were it possible to collect them.

From the sociological and political point of view this is particularly the case with regard to the negro and to those having a mixture of negro blood; and in the Southern States such questions as the following are of great practical interest: Is the negro population increasing faster than the white? Is the proportion of mixed bloods, such as mulattoes, quadroons, etc., increasing in proportion to the general population? Are the fertility and expectation of life of mixed bloods greater or less than those of pure whites or pure blacks under the same circumstances of environment? We will return to these questions hereafter; at present I merely refer to them as being the probable reason for the introduction into the law for taking the next census of a special clause providing "that the population schedule shall include an inquiry as to the number of negroes, mulattoes, quadroons, and octoroons," an attempt to obtain information which has not heretofore been sought in this way. In obtaining the records of deaths occurring during the census year beginning June 1, 1889, an effort will be made to have the deaths of colored persons distinguished into those of pure negroes and those of mixed blood. It will probably be impossible to obtain the data for either living population or deaths with the minuteness of subdivision indicated by the words "mulatto," "quadroon," and "octoroon"; but there is reason to hope that in many sections of the country we shall be able to distinguish those of mixed blood from the pure blacks and the pure whites, and to give some opinion with regard to their diseases and death-rates.

The results of the last census, although imperfect, show such marked differences as regards the mortality from certain diseases, not only between the whites and the blacks, but between those of English, Irish, and German descent, as to make it certain that it will be worth while to pursue this branch of inquiry more minutely as opportunity is offered to us hereafter.

The influence of race upon mortality is specially manifest in the death-rates of cancer. The number of deaths from cancer per 100,000 population in certain portions of the United States, with distinction of white and colored, was as follows:

White.	Colored.
27.96	12.67

In the northern part of the United States the proportion of deaths from cancer in proportion to 1000 deaths from known causes, with distinction of white, colored, Irish and German parentage, was as follows:

White.	Colored.	Irish parentage.	German parentage.
19.1	7.8	24.3	25.8

It will be seen from these that the liability to death from cancer is not half as great among the colored people as it is among the whites, and that there is a greater tendency to death from cancer in persons of German parentage than in all the average white population, especially between the ages of fifteen and sixty-five.

The relation of race to vital phenomena in general, and to disease and death-rates in particular, forms one of the most interesting branches of what Galton calls the "science of heredity," but it is a branch in which little progress has been made, and for the study of which the United States offers greater opportunities than any other country. "The question of race influence is not merely an abstract matter fitted only for well-rounded periods in the discussions of the schools, but it profoundly affects vital and national life." It is a force which acts incessantly upon and menaces us, and, so far as we can now see, it is mainly upon the outcome of the distribution and prevalence of race that depend civilization, religion, and the future of man upon the earth. In so far as the conditions of things tend to preserve the best types, progress is favored. In so far as they tend to destroy or to debase them with inferior types, progress is hindered. Not every mixture of race prevails, or persists, but there has been a certain amount of mixture wherever there has been progress in human affairs. Such mixture appears to have been a consequence rather than a cause, yet it may become an important secondary cause in changing or modifying the course of human events.

The census gives us a view of the population on a certain day, and, if well taken and properly applied it gives a general view of the stream of life as it flows on that day, with its variations of breadth and depth, from which it is possible to calculate, within certain limits, the velocity of the current, the rapidity of change, and the probable rate of increase or decrease, especially if comparisons can be made with the results of a previous census taken in the same way. It may also indicate periods of widespread disaster or of migration.

The proportions of the living population in 1880 show that the decrease in the number living at each quinquennial group of ages was tolerably regular for the whole population for the native-born whites and for the colored as we proceed from the lower to the higher ages, as it should be under ordinary circumstances; but that there is one marked exception for the age-group 15 to 20, in which the line makes a sudden angle, indicating a relative deficiency in the number of persons living at this age.

It will be observed also that the age-group in which there is the largest proportion of the foreign-born population is that from 35 to 40.

Comparing these figures with those of the census of 1870, we find that this peculiar deficiency in the age-group, and the maximum proportion for foreign-born occur in those age-groups which precede by ten years the groups in which they occurred in 1880. The break or step in the descending line is in the age-group 5 to 10, instead of that 15 to 20, and the maximum proportion of the foreign-born is in the age-group 25 to 30, instead of that 35 to 40. Now if we go back between five and ten years from the census of 1870, to see what special cause existed in that period for a diminution in the number of births, we find ourselves in the period of our civil war. These breaks or angles, then, are the scars of one of the wounds which the war inflicted. The shifting of the maximum point in the line of the foreign-born population indicates the unusually great immigration of Irish and German families containing young children, which occurred between 1850 and 1860, forming a wave whose crest is still perceptible. It is safe to predict that in the census of 1890 the break or step showing a deficiency in births will be shifted forward to the age-group 25 to 30, and that the maximum proportion of the foreign-born will be in the group 45 to 50.

In general, however, we may say that the census indicates the state of the population at a given period. Vital statistics, however, consider both the state and the movement of the population, and, therefore, for these we must have something more than the census, viz.: a record of the deaths and births occurring in successive periods, from which we can compute mortality and natal rates.

Mortality, or mortality rate, refers to a ratio between the number of deaths occurring and the number of living population furnishing those deaths. It is to be distinguished from a statement of the number of deaths, since to determine the mortality in a given population, we must not only know the number of deaths, but also the population furnishing that number. This may be expressed in the following formula: $M = \frac{D}{P.}$

In the same way natality does not mean the number of births, but it means the ratio of the number of births to the population in which they occur: $N = \frac{B}{P.}$

The relations between mortality and natality are very important, as I shall have occasion to explain hereafter. The value of such statistics depends, of course, on the accuracy of the individual data and the completeness with which these data are gathered for the given locality to which they relate.

Accurate data with regard to deaths can only be obtained by a system of registration of deaths made at the time they occur. Repeated experience has shown that it is utterly impossible to collect, at the end of a year, by any mechanism of enumeration, more than 70 per cent. of the deaths which have occurred during the preceding year; and it is now well recognized that a complete regis-

tration of deaths can only be secured by legislation which forbids a burial until a permit has been granted from a central office, which permit is issued only on the certificate of a physician, setting forth the cause of death and other facts connected with it which are of importance, and which will presently be referred to. In the great majority of cases it is comparatively easy to enforce the law, even in thinly settled rural districts, and the community soon learns to consider any attempt at burial without a permit as a suspicious circumstance, indicating a desire to conceal either the death or the cause of death, and justifying a special investigation by the authorities. When it has been decided to require a burial permit in all cases, it is not usually difficult to require the data for registration as an indispensable preliminary to the issuing of such permit.

Any system which depends upon the returns of undertakers for a record of deaths gives incomplete and unsatisfactory results. It is only where the permit must be obtained before burial, and the certificate must be filed at a central office before the permit is issued, that a complete record of all deaths will be obtained. Any complete system of death registration should include some method of verification of the death and of its cause, which must be certified to by some person having the special knowledge which alone can enable him to give such a certificate.

In the first place, we must have this verification to insure the fact of a death having taken place. In its absence, in a large city, there is little or no difficulty in having recorded the death of a person who may be either alive and well, or non-existent, and the door is thus opened to frauds of various kinds, some of which have actually been attempted and discovered, while others, no doubt, have been successful and remain still unknown. Such verification is also necessary to insure the fact of real as opposed to apparent death in any case, and thus prevent premature burial,

The utility for this latter purpose is, of course, small, for the popular idea as to the frequency of trance or other conditions simulating death, so that the true state of affairs is not detected, is, as you all know, grossly exaggerated. Nevertheless, this consideration may enter as a factor into an argument in favor of such skilled verification.

The main reason, however, for the verification of a death by expert testimony as to its cause is, that it is necessary to establish the fact that a death has taken place from what may be called natural causes as opposed to criminal causes.

This verification of death, and of the causes of death, may be made either by physicians employed for that particular purpose and paid by the State, or by the physician under whose charge the deceased person has been immediately before death, in which latter case only those cases which have not been under the treatment of a physician are referred to a public medical officer, or the coroner, for verification and determination of the cause of death.

The first system is that which is employed in France, Austria, and Belgium. The second is the one made use of in England and in this country.

All registration laws include the certificates of physicians as an essential part of their machinery. Some do this directly, requiring that physicians keep a list of all deaths occurring in their practice, and shall forward this list at stated times to the registrar. This method has invariably proved to be a failure, as has also the similar attempt to require of clergymen that they shall furnish lists of the marriages which they have solemnized. It is utterly impossible to enforce such laws under penalties, and not fifty per cent. of either clergymen or physicians will carry out their requirements under ordinary circumstances.

Where burial permits are required, a physician may be made responsible for a certificate as to those matters only with regard to which his special professional knowledge is necessary, such as the cause of death, duration of sickness, etc.; or he may be required also to certify as to the age, birthplace, parentage, occupation, etc. The great majority of physicians accept without hesitation the data furnished on these points by some member of the family, or whatever appears set down in the form of a certificate brought to them by the undertaker for signature. But there are always physicians who question the propriety of the law, and object to certifying to that of which they can have no personal knowledge, while some few may possibly decline.

The requirements of a registration law impose upon medical men who sign certificates as to causes of death a very considerable responsibility, much more considerable, in fact, than many of them probably realize. The physician is to consider whether his knowledge of the case is sufficient to enable him to determine whether or not the death was due to what are called natural causes, whether there is reason to suspect that violence, poisoning, criminal neglect, etc., may have been more or less factors in the result, and whether any certificate as to the nature of the cause is justifiable. The pressure upon the medical man to certify to more, or, sometimes less than he knows, is occasionally very strong, but the only course in doubtful cases is to indicate clearly what one knows, as distinguished from what he merely believes on the faith of statements made by others. In ordinary matters of daily routine occurrence, in which there is no apparent motive for falsification, we constantly do and must accept the statements of others, the physician acts as the primary judge of the evidence submitted by relations and friends as to the time of death, the age and race of the decedent, the duration of the disease, etc., and is justified in certifying to his belief in this evidence, very much as he is justified in certifying to the date of his own birth.

It has been objected[1] that registration laws may do very well for countries where people have been trained for generations in that line of action, but that they are at war with principles of democratic action and with individual freedom, and that the reason why physicians do not execute the law is because they not only have no personal interest in its execution, but because of a feeling of revolt against the injustice of a law which inflicts a special tax in the shape of time and trouble, and affords no compensation for the extra labor and expense.

These views are not those held by the majority of the medical profession, and it is not probable that the payment of a fee would add much, if anything, to the completeness or accuracy of the registration data furnished

[1] Dr. H. M. Lyman, in the Chicago Medical Journal, 1878, p. 252.

by medical men. Nevertheless, these objections have some weight from a legal standpoint, and should be borne in mind in attempts at legislation. Any attempt to compel a physician, under penalty, to report the age and birthplace of his patients, would, certainly, be worse than useless. The policy is not to call upon medical men to submit the information which should be demanded from the parent or householder. Under the police power of a State, certificates of the cause of death may be required from physicians as being necessary to secure life and protect property, but returns for merely statistical purposes, such as of births, cannot be required of any other than the parent.

There is no good reason why reports of births should be required from medical men. But as regards reports of deaths, it is to the interest of properly qualified members of the medical profession that such certificates should be demanded from them. Whenever and wherever certificates as to the cause of death from physicians are required, there must also be established some system of determining who are physicians within the intent of the law.

At first it may be necessary to accept certificates from anyone and everyone who chooses to call himself or herself a physician; but the character of some of the documents of this kind which will come in, will very soon indicate the necessity for some discrimination. Thus it is that the certification of the causes of death by physicians is the essential foundation, and it is the only essential foundation of legislation with regard to the qualifications which the State has a right to demand from practitioners of medicine.

The registration of marriages, births, and deaths is important to the individual, because it gives him increased security in his rights to property and to life, by enabling him to furnish proof of parentage and legitimacy, by increasing the chance of detection of fraudulent claimants to property of which he is the true heir, and by discouraging criminal attempts to shorten his life, owing to the fact that evidence must be furnished that death was due to natural causes, or a special legal investigation of the circumstances will be made. Of its importance to the community as a means of protection of health and life, and to scientific men and physicians as a means of investigation of some of their problems I need give no proof to this audience.

We can hardly be said to have a complete system of registration of births in any State or city in this country. Probably, the city of Providence, R. I., has the most complete records of this kind of any of our cities. As regards the registration of deaths, Massachusetts, New Jersey, the greater part of Connecticut and New York, a large part of Alabama and Minnesota, and most of our large cities, have now a fairly satisfactory system and complete record. For the rest of the United States, there is either no system of registration, or, if any exists, it is a very imperfect and incomplete one, the results of which cannot be depended upon, and which cannot be compared with the results obtained in the localities above referred to as having a complete system, and the only means which we have of estimating the mortality of these localities is by the reports of deaths for the preceding year collected by the census enumerators.

It is for this reason that the decennial United States Census is a matter of such great importance to scientific medicine and to practical sanitation—of much greater importance, in fact, than most physicians and health officials seem fully to appreciate. It is true that the death records thus obtained in the large areas of the country in which there is no registration are incomplete, and, as regards causes of death, especially inaccurate; but they are the best we have; they are becoming better at each census, and the death records in the registration areas serve to measure their reliability, and to indicate to some extent useful corrections.

As the value of statistics of deaths depends very largely upon the possibility of comparing them with corresponding statistics of the living population furnishing those deaths, it is evident that the modes and times of obtaining and of publishing the results of the census are matters of great importance to medical and sanitary statisticians. This is especially true as to the frequency with which a census is taken, the units of area made use of in its published tables, and the combinations of age, sex, race, and occupation data given in connection with such units of area.

Let us first consider briefly the time of taking the census.

The conclusions of the various statistical congresses with regard to the methods of the census are summed up by Korosi in his project for a census of the world, published in 1881.

The first of these conclusions was that the census should be taken every ten years in the month of December, and in those years the number of which terminates with zero; recommending, however, that intermediary censuses should be taken at the discretion of different governments.

The taking of the census at the end of December has the advantage that a relatively greater number of population are in their own homes than at any other time, and that it corresponds to the termination of the calendar year, at which date many State and municipal reports terminate, so that all the figures being for one date are readily comparable with each other. For a very large part of this country it would be quite as easy to take the census at the end of December as on the first of June; but there are some sections in which attempts to take the census in the midst of cold and rainy weather, for a thinly scattered population, would be made under very great difficulties.

In a paper read at the British Health Congress in May, 1889, Sir Edwin Chadwick urges the desirability of an annual census for the improvement of public administration, referring to the fact that "in commerce and in manufactures, as in every large company, there is an annual stock-taking, and upon that stock-taking a report and declaration of the results are made to the stockholders. But what is the state of the political administration which has only attained to a stock-taking of the living people, of the healthy and the weakly, on whom the power and prosperity of the country depend, which is only attempted every ten years, and is only completed in three years, leaving the numbers, meanwhile, to be got at by estimates, necessarily erroneous—often widely erroneous. An annual census of the more numerous animal stock has been lately striven for and attained, and is worked out by the Agricultural Department of the Board of Trade. It is some forty-five millions of the agricultural stock, whilst the population of England and Wales is about twenty-eight millions. Other nations, as France

and the United States, have halved the inconvenience of the stock-taking of the human population."

Sir Edwin is in error in this last statement, for the United States Census is taken but once in ten years, and but a few States have thus far taken the intermediate census, which would make the enumeration come at quinquennial periods.

In the law providing for the last census an attempt was made to induce the States to take this intermediate census, by an offer that the United States should pay one-half of the amount paid to all supervisors and actual enumerators in the State, increased by one-half of the percentage of gain in population in the State, provided that the schedules used should be similar to those used in the census of the United States, and that a full copy of all schedules returned, and reports made, shall be deposited with the Secretary of the Interior on or before the first of September following.

This proviso, however, has not had the effect designed, probably for the reasons set forth in the report on the census of Michigan for 1884, namely, that at least two months are required to make the enumeration, transmit the blanks to the Secretary of State, and arrange them, which leaves but one month (August) for correction of errors and for making the full copy of the schedules. As applied to the State of Michigan, this would require a thousand or twelve hundred clerks for twenty-five days. The amounts paid the supervisors and enumerators for the United States Census of 1880 were $71,192.06, the one-half of which, increased by one-half percentage of gain, gives $42,401.99 as the amount Michigan would have received from the general government if its census had been taken in conformity with the national census law. But it would have cost from $60,000 to $70,000 to copy the schedules and reports, or from $18,000 to $20,000 more than the amount that would have been received from the national treasury to compensate for the work. A few sets of territorial schedules were sent in, but nothing was done with them.

Sir Edwin, however, urges that even the quinquennial census would be considered insufficient for business purposes in the ordinary affairs of civil life, and refers to the fact that the proposition for an annual census in the European governments was discussed at the International Statistical Congress at the Hague, having been proposed by himself and strongly seconded by Prof. Engel, the head of the Statistical Bureau of Prussia. The matter was appointed to be the subject of discussion at a future Congress; but, in the meantime, the meetings of the Congress were interrupted and the matter has never again come up as a subject for international discussion.

Annual censuses have been tried and abandoned in Canada. Triennial censuses have also been tried, but the general conclusion seems to be in favor of five year periods.

In Austria, Belgium, the greater part of the British Empire, Denmark, Holland, Hungary, Italy, Norway, Sweden, Switzerland, and the United States, the census is decennial.

In the Sandwich Islands a census has been taken every six years since 1853.

In France a census was taken in 1801, 1806, and every five years since 1821.

In Sweden, every five years from 1775 to 1860.

In Germany, every five years since 1866.

In Finland, every five years since 1875.

In Sweden, every three years from 1749 to 1775.

In Baden, every three years from 1818 to 1867.

In Hanover, every three years from 1830 to 1864.

In Prussia, every three years from 1834 to 1867.

In Saxony, every three years from 1834 to 1867.

In Bavaria, every three years from 1834 to 1867.

While in Upper Canada (now the Province of Ontario) a census was taken annually for nineteen years, from 1824 to 1842.

In New Zealand nine censuses have been taken since that of 1861, at intervals of from three to seven years, the last interval being five years.

In Queensland there is also a quinquennial census.

While it is not probable that any agreement for an annual census for the whole country will be made in the near future, either by the United States or by State Governments, it is certainly quite possible that the desirability for more frequent enumerations in the larger towns and cities will soon become so evident as to lead to systematic arrangements for carrying it out. Even now, many cities take what they call a police census, at irregular intervals of from three to five years, for the purpose, mainly, of making rough subdivisions of the voting populations in the form of precincts, and of obtaining information for the purpose of levying taxes, more especially for school purposes. These police censuses, however, relate only to adult males, and upon them are based estimates of the number of the remaining population, which are used by the sanitary officials in computing death-rates. These estimates, however, are almost invariably too high, as is shown by the next State or national census, and, in any case, afford no satisfactory basis for computation as to the number of inhabitants in the different wards of the city, owing to the great variations in the ratio between the voting population and the rest of the people in different classes of society and in different parts of a town.

By the use of proper schedules, somewhat on the English system, left at each house, there should be very little extra expense over that of the ordinary police census in collecting sufficient data with relation to the entire population of a city, to give accurate data with regard to the vital statistics of the population, and these, combined with a good system of registration of deaths and of marriages, would give the means for a system of vital statistics of a place such as, at present, no city in England or in this country possesses.

The unit of area made use of in furnishing the census data is a very important matter in connection with the statistics of deaths, for, practically, these last must be classified by the same areas. The census units of area have usually been fixed by political considerations with reference to votes, to taxation of various kinds, and to military service. In this country, the smaller unit is usually the county or city, or, in some cases, the wards of a city, the larger units being the State or Territory.

For the purposes of vital and medical statistics, such units of area are often of little or no importance, because the boundaries of wards, of cities, of counties, and of States are not fixed with reference to the peculiarities of topography, drainage, character of habitations, or of the people, which are important factors in the causation of disease and death, and which, therefore, require study, with the object of properly dividing the population for purposes of representative government. Moreover,

in the publications of the several censuses prior to that of 1880, the population of the smaller areas, such as cities and counties, was, as a rule, given with distinction of sex and of color only, while the most important factor in vital and medical statistics, namely, age, was stated in detail for States only. In the census of 1880 an important advance was made in this respect, for in connection with the mortality statistics the population of each county having 10,000 inhabitants and upward, and of the large cities, was given with distinction of age under one year and under five years for each sex of each color.

In the next census the population by counties will be given with still further distinctions of age; it will be given with distinction of age under one year and under five years for wards, and in about a dozen of the largest cities it is proposed to select certain areas which present peculiarities as to topographical features, or as to the character of the people inhabiting them, and to give the population of these by age, sex, and color, as a basis for the study of the death-rates of these localities. In a large city like New York, even the ward is usually too large to be a satisfactory unit of area for statistical study, since one ward will contain some of the best and some of the worst habitations, and include classes of people having very different means, habits, and death-rates.

In the annual report of the city of Brussels the population, births, and deaths are given by streets, courts, and alleys. This does very well for Brussels, where the streets are short; but in our large cities, regularly laid out in rectangles, where the streets are miles in length, and traverse localities differing widely in topography and in character of population, it does not seem to be applicable.

The data required on individual certificates of death should correspond to those required on the schedules of living population, and, in addition, should give the cause of death.

The death-rate, or mortality, is the ratio between quantity of life and loss of life. It refers to a definite unit of time, viz., one year's life of one person, and the quantity of life is the sum of the time lived by each of the population expressed in years. Two persons living six months each, or twelve persons living one month each, have one year of life. If the population is assumed to be stationary, that is, one in which the births and deaths and the emigration and immigration are exactly equal to each other, and similarly distributed throughout the year, then the number of the population multiplied into the time under consideration, expressed in years and fractions of years, gives the quantity of life.

A population usually, however, increases in geometrical progression, and in such case we must find, by means of a well known formula, the mean population of the period, which will be less than the arithmetical mean of the populations at the beginning and end of the period, and greater than the population living in the middle of the period; but the differences are small, and, in most cases, either figure may be employed.

For example, suppose we wish to calculate the death-rate of New York City for the year 1888. By the censuses of 1870 and 1880, we know the population on June 1st in each of those years. From these we determine the ratio of increase, and thence the population on January 1 and December 31, 1888, from which the mean population can be computed, or the arithmetical mean be taken. Or we can compute directly the population on July 1, 1888, and it makes little difference as to probable accuracy which of these three estimates of population we take.

You will perceive that this method rests on the assumption that the ratio of increase of a locality during ten years as determined by the census, continues unchanged and uniform thereafter. This is hardly ever true, and, for many localities in the United States, and especially in the rapidly growing West, it is very far from the truth, which is a strong argument for more frequent counts.

Various methods are used by statisticians to correct the estimates of population made for a city at periods other than during a census year, as determined by a formula of arithmetical or geometrical proportion, among which may be mentioned the use of the ratios supposed to exist between the number of houses or the number of voters, or the number of school children and the total population. The number of houses is determined from tax records or by a special count; the number of voters by registration lists or by a police census; the number of school children by a special census; and the ratio which these bear to the whole population is guessed at, or is calculated from the data obtained at the last census.

The most useful and reliable of these methods is the use of the average numbers of presumed occupants of inhabited houses, the other ratios being of very little value.

This has been very well shown by Dr. Russell, Medical Officer of Health at Glasgow.[1] In the case of Glasgow, he considers the estimate of the population based on the number of inhabited houses and the estimate based on preceding censuses, and finds that both methods give a population above the actually existing one as shown by the next census. The error in the estimates based on the previous census was due to a change in rate of growth. The error in that based on the number of houses was due partly to incorrect data of the number of inhabited houses, and partly to an error in calculation.

In the United States Census of 1870 the number of persons in a dwelling in the large cities varied from 14.07 in New York to 5.20 in Toledo, these differences being due, to a considerable extent, to the counting of large tenement houses containing numerous families as a single dwelling.

If we take the data by families, we find in the same census that the largest number of persons to a family was in Kansas City, the number being 5.78, while in New York it was but 5.07.

In 1880 the proportion of persons to a dwelling ranged from 16.37 in New York to 4.68 in Memphis. In Baltimore it was 6.54; in Boston 8.26; in Philadelphia 5.79. The number of persons to a family was: in Baltimore 5.8; in Memphis 4.23; in New York 4.96; in Philadelphia 5.13.

It is evident that no value can be placed on estimates of population of a city based upon the number of habitations it contains, if a cottage and a tenement house are to be equally reckoned as a habitation.

Estimates of the population based on police censuses, on the number of school children, or on city directories,

[1] The Decennial Census as a Basis for Statistics in Intervening Years. Glasgow, 1881.

are of very little use, being, in almost every case, in excess of the truth. No general rules can be laid down for the estimation of the population of a city at a period between two censuses. It is a special problem in each case, for the solution of which there are needed an acquaintance with the locality, to be sure that boundaries have not changed, the information which can be obtained from special local censuses, from the number of inhabited buildings, from migration statistics, etc., all of which must be applied to the data furnished by the last general enumeration of the people, which, in any case, must be resorted to for the ratios which are to be used.

It is to be observed that municipal statisticians and registrars rarely make use of the means afforded by a general census to correct the figures of population; and, therefore, rarely alter death-rates which they have given for the years intervening since the last census; yet it is highly desirable that this should be done in order to prevent the use of misleading figures. For example, in Chicago, in 1873, the registrar estimated the population of the city at 400,000, and deducted therefrom the death-rate for the year as 23.89. Comparing the populations in 1870 and in 1880, it is apparent that the true population was about 350,000, giving a death-rate of over 27.

In Boston, in 1876, the estimated population at the time was 352,758, giving a death-rate of 23.39, while the true population, as shown by comparison of census data, was about 313,000, giving a death-rate of over 26.

The shorter the period for which a death-rate is given the greater is the liability to error. The ordinary forms of weekly death-rates reported for large cities are annual death-rates—that is, they represent what would be the annual death-rate if the proportion of deaths to the population for the week continued for one year. If, for example, a town having a population of 100,000 reports as its weekly death-rate for a given week 25 per 1000, this does not mean that during the week there occurred 2500 deaths, but it means that if the population and number of deaths each week continued the same during the year, 2500 deaths would have occurred in the course of the year, or that for the week in question the number of deaths was 2000 divided by 52.17747. A weekly death-rate is useful to show where the greatest variations have been in the year's mortality, but it is no indication of the health of a town for a particular week, and it is useless as a means of comparison of the healthfulness of one town with that of another. This is largely due to the law of probable deviation or error in mortality statistics in relation to the number of instances used as data without reference to their accuracy. This law of probable error in relation to number of data is an exceedingly important one to be kept in view in all statistical inquiries, and especially in those relating to vital and medical statistics.

For example, suppose that in a village of 1000 inhabitants there occur 25 deaths in the course of a year, and in a neighboring city of 10,000 inhabitants there were 200 deaths in the same time. What is the probability that the death-rate of 25 per 1000 for the first and 20 per 1000 for the second, indicate the relative healthfulness of the two places, supposing the data to be perfectly accurate, and that we have no other information in regard to them than that stated?

Or suppose that during one year, in a population of 100,000 persons there occur 2000 deaths, what is the probability that in a second group of 100,000 persons under the same circumstances, the number of deaths in a year will not be less than 1950 nor more than 2050?

The answers to such questions as these are furnished by formulæ derived from the mathematical laws of probability. The simplest of all these formulæ, and the one most practically useful for rough and ready calculations in cases such as that given in the first example, is, that the mean or probable error is equal to the square root of the number dead. By this rule the probable error for the village of 1000 inhabitants for 25 deaths would be 5, and, therefore, the mortality in this place might vary between 20 and 30 per thousand, without any certain indications of variation in the sanitary conditions of the place. In the city of 10,000 inhabitants with 200 deaths, the probable error is a little less than 15, the variation between 185 and 215 corresponding to an average mortality of 18.5 to 21.5 per thousand, being a probable variation of only 3 per thousand instead of 10, as in the first case. It is very clear, then, that in comparing these two mortality rates, no positive conclusion can be drawn as to the relative healthfulness of the two cities, seeing that the probable variations overlap, as it were, for the rates ranging from 20 to 21.5.

The formula that the probable variation in the number of deaths is the square root of that number gives results that are somewhat too great, being merely an approximation to the true formula, which is of much more general application, but requiring too much computation for general use. I shall refer to this matter of the law of error in more detail in speaking of medical statistics. For the present, I only call your attention to the fact that it is necessary to bear in mind the absolute numbers as well as the percentages, and that, therefore, statements of ratios only are insufficient for definite conclusions.

What is a fair or normal death-rate? Taking an average healthy rural district in the United States where there is little migration the annual gross death-rate for the whole population will be from 13 to 15 per 1000. In towns of from 10,000 to 15,000 inhabitants, having a good general water supply and proper sewerage, the gross death-rate should not exceed 16 per 1000. In cities of from 20,000 to 100,000 inhabitants it should not exceed 17 per 1000, while in cities of over 100,000 inhabitants it should not exceed 19 per 1000. The great causes of high death-rates are poverty, overcrowding, intemperance, excess in heat and cold with moisture, foul air, bad food, impure water, uncleanness, contagion, ignorance, etc.

The statistics of births are of much importance in vital statistics because of the influence of the birth-rate upon the sex and age distribution of the population. Unfortunately, in this country, as I have already explained, hardly any locality possesses such an enforced system of registration of births as to permit of an annual calculation of birth-rates and their comparison with the deaths of children under one year of age, or those born within the year. We can only obtain this data for any large extent of country by referring to the census records.

The usual method of indicating the birth-rate is by giving it as the proportion per 1000 of births to the population of all ages; but a much better and more satis-

factory mode of computation is to calculate the number of births to the number of women between the ages of 15 and 50 or 55, living in the community referred to.

The general subject of birth-rates is interesting chiefly, in relation to social statistics, to the fecundity or rate of increase of population or of people of different races; but in relation to mortality statistics it may also become an important factor in the calculations.

There has been from time to time some controversy between statisticians and health officers with regard to the influence of birth-rates upon death-rates, or as to the precise relations which exist between the two. As the death-rates of infants are much greater than those of the population at higher ages, it has been claimed by some that where there is a high birth-rate there is also a high death-rate; but it cannot be said that this will invariably be the case, or that the one is directly the cause of the other, except in certain cases for a comparatively short series of years.

Starting with a population, if possible, numbering in all 308,378, supposing that there are no migrations, and taking the death-rates for each group of ages to be shown by the New York life table, we have calculated the progress of such a population for 100 successive years under two suppositions, the first for a constant birth-rate of 35 per 1000, and the second for a constant birth-rate of 45 per 1000. The death-rate at the commencement was 32.42 per 1000. Under the influence of a constant birth-rate of 35 per 1000 this death-rate increases during the first period of five years to 33.17, and after that steadily sinks until at the end of fifty-five years it becomes less than the original death-rate, and at the period of sixty-five years has sunk below it, after which it again rises until at the end of 100 years it has reached the rate of 32.44.

Taking now the same population under the same circumstances at a constant birth-rate of 45 per 1000, we see that the death-rate rises in the first five years to 36, after which it steadily sinks as it did in the former case, until after the lapse of sixty years it is only 32.01, after which it again rises, and, finally, comes down to a point a little below that from which it started. In both these cases, then, it is evident that the high birth-rate for a time produces an increased death-rate, since there are no other circumstances present to account for the change. But after the first five years the proportion of those living at the ages at which there is the lowest mortality has been so much raised as more than to counterbalance the large number living in the first years of life, and, therefore, the death-rate steadily descends.

But to understand the full effect of this change it is also necessary to consider the average age at death. Here it will be found that the average age at death at the commencement being 31.37, decreases to 29.65 under the influence of a constant birth-rate of 35 per 1000, while, with the higher birth-rate of 45 per 1000, it diminishes as the death-rate diminishes to the age of sixty-five, at which period it is only 23.02, after which it again rises as the death-rate increases.

Comparing with this the proportions of the population living at each group of ages at the beginning and end of the 100 years under each of these two different birth-rates, it is found that under the influence of the higher birth-rate the proportion of the population under twenty-five remains high, while after that age it falls below the original figures.

As a rule, high birth-rates occur in cities and in the crowded parts of cities, among the laboring classes of the population where the causes of disease and death in infants are especially prevalent.

On the other hand, it is to be noted that a high death-rate among infants has some tendency to increase the birth-rate, because the interval between childbearing is shortened by the early death of the infant; and in the effort made by poor women to avoid frequent childbearing, a common means is to suckle the infant up to at least two years of age, in order to prolong the interval between pregnancies, which is a practice injurious both to the mother and to the child.

If we had under consideration a community in which there were no migrations, and in which the population neither increased nor diminished, the relations between birth-rate and death-rate and the average duration of life could be expressed by a simple formula in such a way that, given either two of these quantities, we could determine the third. If, for example, in a population of 1000 persons five births and five deaths occur annually, and if we assume that every individual lives to the same mean age, evidently just 200 years would elapse before the whole of the original 1000 would have died. This 200 years would be the mean duration of life; and this would be the case also if deaths occurred at different ages; only in such a case many would die below the mean age, when some would greatly exceed it. This subject has been considered by Dr. J. S. Bristowe,[1] who says that "there can be no difference in the healthiness of two localities, in one of which the death-rate is twice as high as that of the other, provided other conditions are such that in both cases the inhabitants attain the same mean age; or, conversely, supposing different populations to enjoy the same mean duration of life, any differences which may be presented by their respective death-rates are due to other circumstances than differences of health." He also says that the average duration of life can be determined by the birth-rate and death-rate taken together, but not from the death-rate alone. If he means by healthiness, mean duration of life, this statement is equivalent to saying that where the mean duration of life is the same it will be alike, an indisputable proposition, though not a very instructive one. But if by healthiness is meant the sum of the conditions of the locality as to altitude, drainage, cleanliness, etc., which tend to lessen or increase deaths in the people living in it, then the statement is incorrect, for it does not take into account age, sex, or race distribution, occupations or migrations. Setting the question of migrations entirely aside, it is perfectly possible that two populations attaining the same mean age, and having the same death-rate, may live in two localities, one of which is decidedly healthier than the other, so that if the two communities exchanged habitations, a marked difference in the death-rates and mean age at death would result.

Putting aside all these purely speculative considerations with regard to what might happen in a stationary population, where there is no migration, let us see what the significance of death-rates is in our cities and rural

1 "On the Mutual Relations of the Birth-rate and Death-rate." St. Thomas's Hospital Reports, New Series, vol. vii. p. 245, London, 1876.

districts as they now exist. We wish to know how much of the death-rate is due to peculiarities in the character and occupation of the population itself, and how much to peculiarities in the locality, and for each of these classes we wish to know how much is necessary and unavoidable, and how much is due to causes which may be modified or done away with. Precise knowledge on these points we can never have, but we can obtain a sufficient degree of probability to guide our action in the premises.

If we wish to study carefully the influence exerted upon health and life by race characteristics, by residence in a given locality, by marriage, occupation, social standing, etc., we must have the means of comparing results given in different localities, or in the same locality at different times, or for different races, occupations, etc., under like circumstances.

To accomplish this we must, as far as possible, estimate the influence of other circumstances not connected with the particular point which we are investigating, but which, notwithstanding, exercise a powerful influence upon sickness and death-rates, and of these, the two most important influences are those which differences in proportion of sexes and ages of the population to be compared exert.

The means recognized as best calculated to eliminate the influence of sex and age by, as it were, reducing the population to one uniform scale in these respects, is by calculating the expectation of life at each age for all the several conditions of locality, occupation, etc., which we wish to investigate; in other words, by the preparation of what are known as life tables. A life table shows what would be the tendency, or liability, to death at each age in a population in which there is no migration, and in which the births and deaths just equal each other, if such a population were subjected to the same influences tending to produce disease and death as have affected the actual population under consideration, and from which the data are derived. It is, of course, impossible to prepare life tables which shall be strictly accurate and exactly comparable one with another, because it is impossible to obtain strictly accurate data. A life table is intended to answer the question, "Of a million children born, how many of each sex die at each age?" or "What is the time which a man or woman of a given age may be expected to live?" A strictly accurate answer to this question could be given only if we knew the precise dates of birth and death of each of a million of children born under the circumstances we are investigating; and, strictly speaking, this million of children should all be born on the same day. Notwithstanding, by using large masses of data which are more or less attainable, and by applying certain well-known corrections, the individual errors tend to neutralize each other, and we can prepare tables which will be quite accurate enough for purposes of comparison.

A vast amount of labor has been expended upon, and study given to this subject; for immense business interests and important points in the jurisprudence of inheritance depend upon the existence and accuracy of these tables. Hundreds of millions of dollars have been, and now are, invested in life insurance on the faith that certain life tables truly represent the average course and duration of the life of a particular class of the community —and the result of more than a hundred years of experience has been applied to their correction under the powerful stimulus of urgent need, from a pecuniary point of view, to have them as accurate and reliable as possible.

Probably the earliest form of such a table known is that given in the Pandects of Justinian by Domitius Ulpianus, commonly known as Ulpian, a distinguished lawyer, who was the secretary of Alexander Severus, and who wrote in the beginning of the third century of the Christian era. This table is found in an extract from his writings given in the Pandects in a treatise by Æmilius Macer. Ulpian states that in Rome registers of Roman citizens, including the data of age, sex, and death, were kept by the city from the time of Servius Tullius to that of Justinian, including a period of 1000 years. From these data, which applied to the more prosperous class, Ulpian gives a scale for estimating the purchase value of communities according to the different value of life at different ages, and sums it up in saying that it is usual to compute thirty years maintenance for all those under thirty years of age, and that for all over that age as many years are allowed as they lack of sixty.

In connection with the question of annuities, Ulpian gives a scale for estimating them, which is apparently the probable length of life of persons of the ages named.

The first life-table of modern times was constructed in 1692 by Dr. Halley from the registers of the city of Breslau for five years, and was printed in the *Philosophical Transactions* in 1693. The data for this and for other similar tables constructed in the 18th century were too imperfect to permit of good results, and the first life-table which was selected as of sufficient accuracy for business purposes is what is known as the Carlisle life-table, compiled by Mr. Milne in the early part of the present century.

We now have a considerable number of life-tables applicable to the special classes of those who are likely to insure their lives, derived from the experience of a large number of insurance companies in Europe and in this country; and also a number of life-tables derived from the data of the whole miscellaneous population of the country for England, France, Germany, Sweden, and for certain parts of this country.

In order to prepare a life-table for a given locality or occupation we must know the number of persons living at each year of age, and the number of deaths at each age which have occurred among these persons for one or more years. We assume that deaths have occurred at regular intervals during the year for each age, and proceed to compute the number of persons at each age who were living in the middle of the period for which the deaths are registered.

In using census data, however, we cannot directly compare the deaths at each single year of age with the number reported by the census as living at that age, because of the strong tendency of the average man or woman to report ages either of the living or the dead, but especially the former, in numbers which are multiples of ten or five, or in so-called round numbers.

An examination of the census of Massachusetts and New Jersey for 1880 will show that the death-rates calculated from it would indicate that the mortality at 25, 30 and 40 is much less than at the ages immediately preceding and following them. Thus, it would appear that in Massachusetts the mortality of white males at the age of 50 is only 9.42 per 1000, while at the age of 49 it is

16.11, and at the age of 51 it is 19.16 per 1000. There is, however, no such abrupt change in the law of mortality at the age of 50 as these figures would indicate, and it is necessary, therefore, to make corrections for this source of error. It is true that the error in the number of deaths reported at the even decades is usually in the same direction as the error in the number of the living population, and therefore tends to neutralize the error in the computation of ratios; but this is not always the case, and the error is almost invariably in the direction of making the mortality at the even decades too low, and for the adjacent years too high.

The error in question may be corrected in distributing the excess reported at the even decades to the adjacent years, by aid of the calculus; but the easier and usual way is to calculate the mortality rates by groups of ages, including five or ten years in each group—that is, for the periods 20–24, 25–30, 30–34, etc., or for the periods 20–29, 30–39, etc., or for the periods 25–34, 35–44, etc. Of the three modes of grouping, the last is the best, because it properly distributes the excess about the even decades, which is the greatest.

If we take the group of ages 20–29, 30–39, etc., the whole excess for the year 30 is distributed in the succeeding years, whereas a part of it really belongs to the years in the preceding group. This objection applies to a much less degree to the grouping of 35–44, 45-54, etc., for the excess at 45 is much less than at either 30 or 40; still it is well to remember that approximate life tables, calculated as I shall indicate, give for this reason somewhat less than the true mortality, and somewhat too high an expectation of life for adult ages.

This source of error affects all mortality statistics derived from the results of a national census, and from the ordinary system of registration, but it does not affect mortality statistics derived from the records of life insurance companies, in which it may be presumed that the ages of both the living and decedents are accurately stated.

I do not propose to describe the methods of constructing a life table. To make one sufficiently accurate to be used for the purposes of life insurance requires elaborate calculations and corrections, and the use of complicated mathematical formulæ; but the construction of an approximate life table in which no attempt is made to secure regular gradation is a comparatively easy matter, and has been fully described by Mr. N. H. Humphreys in a paper in the *Journal of the Statistical Society* for 1883, which method was made use of in calculating the approximate tables given in the mortality statistics of the last census.

ORIGINAL ARTICLES.

PURULENT PERITONITIS, WITH PERFORATION OF THE APPENDIX VERMIFORMIS.[1]

BY ARTHUR V. MEIGS, M.D.,
PHYSICIAN TO THE PENNSYLVANIA AND TO THE CHILDREN'S HOSPITALS.

THERE was admitted to the Pennsylvania Hospital October 19, 1889, a woman, who gave the following history: She was twenty-three years of age, single, and was born in England. She had been three months in America, and six weeks ago had a miscarriage in the Preston Retreat. She got up and went to work too soon, she thought. Three days before her admission, after having been exposed to cold, she was taken ill. Upon admission the pulse was small and rapid (146 per minute) and her temperature 101⅘°; there was severe abdominal pain, the belly was swollen and tympanitic, and induration was present in the right iliac fossa over the region of the cæcum. There was frequent vomiting, and she said she had had diarrhœa, though while in the hospital she had but one movement. She also declared that she was passing flatus freely, and even in great amount. It was easy to make a diagnosis of peritonitis, and it was thought likely that its origin had been in the reproductive organs, in view of the fact that there had been a miscarriage so recently. As there seemed to be no obstruction of the bowel, operative interference was thought, for the time at least, entirely uncalled for. She was ordered liquid diet and one-quarter grain of opium and one-twelfth grain of extract of belladonna every two hours. Fifteen hours after her admission she died in collapse.

At the autopsy, made twenty-four hours after death, the following was found: Upon opening the abdominal cavity a large quantity of offensive yellowish pus containing flakes gushed out. The quantity was estimated at two pints. The tissues and organs were everywhere glued together by fresh yellowish lymph, the adhesions being quite firm though not difficult to tear. The under surface of the liver was adherent to the stomach, the stomach to the colon, the colon to the small intestine, the various turns of the small intestine were matted together, and all was covered by the omentum, which was everywhere more or less adherent. The appendix vermiformis was as large as the little finger, being much dilated, and was fixed quite firmly by fresh adhesions, which were easily separated, to the inner surface of the *os ilium*, and near its proximal end contained a mass of inspissated material about half an inch in length by one-third in diameter, and pointed at one end; it had the shape of an ordinary conical rifle ball. Between the position where the concretion lay and the outlet of the appendix into the cæcum was a perforation about a quarter of an inch in diameter and circular in form. The inner surface of the intestines was here and there much injected, and in some areas looked as if there had been actual inflammation of the mucous coat, which was intensely red and thickened at such positions. The uterus was slightly increased in size, and its suspensory ligaments were opaque and thickened. The liver presented upon its surface several broad yellowish areas, and upon section it was found that the same yellow discoloration penetrated into the substance to the depth of about one-quarter of an inch. The other organs presented no noticeable abnormal conditions.

It is sad to contemplate the shortcomings of the application of the science of medicine in this case, for certainly the disease was one which might have

[1] Read before the Philadelphia County Medical Society, Nov. 13, 1889.

been cured if it could have been recognized in its early stage, and surgical operation undertaken before it had produced results incompatible with life. It is of little avail, however, and would ill become us as physicians to sit down and moan over the imperfections of our art; rather must we hurry on to improve our means of dealing with such conditions, and of all the directions in which we may turn our efforts for improvement, there is none which calls so loudly for study as diagnosis. The most serious difficulty that besets us in our management of these cases of peritonitis is the uncertainty of diagnosis, and whether surgeons or physicians we must alike struggle to increase the degree of precision with which we may diagnosticate such conditions. I say this with full knowledge of the great difficulties that are to be encountered from the standpoint of treatment and of the somewhat radical differences of opinion that exist in regard to treatment in some particulars, for, unless a diagnosis can be made, treatment has almost no existence, and certainly is of little avail.

In considering my case, as may now be done in retrospect, I am quite satisfied that under the circumstances nothing better could have been done for the patient.

The error of supposing that the peritonitis, which it was easy to recognize, had its origin in the reproductive organs, though the objective evidences which were present—induration over the region of the cæcum and its absence over the uterine region—pointed in a contrary direction, was natural enough, in view of the fact that the woman had had a miscarriage only six weeks before, and that none of the well-recognized signs of obstruction of the bowel were present—fecal vomiting, constipation, and interference with the passage of wind, being all conspicious by their absence. My decision to wait twenty-four hours at least before calling for surgical aid was also, I think, proper; for, as there were no signs of obstruction, I would have been unwilling to countenance immediate operation, nor do I think the surgeons would under the circumstances have wished to undertake it. This determination to wait was further justified by what was found at the autopsy; that the disease, though arising in the appendix, had, when the patient came to the hospital, progressed so far in causing the various abdominal tissues and organs to adhere to each other, and had already so nearly caused the death of the patient, that no operation would have been of any avail. Finally, with regard to the best measures for relief after it had been decided that at the moment no operation was desirable. About a year ago I read before this Society asshort paper upon the treatment of peritonitis (THE MEDICAL NEWS, December 8, 1888), in which I advocated the use of opium and belladonna in moderate doses in such cases as did not seem to require surgical treatment. From the views then expressed I have as yet seen no reason to recede, and the case the history of which I have recounted seems to me an unusually striking instance of the kind in which the treatment with salines not only could by no possibility have been beneficial, but must have been positively injurious. In a woman without obstruction of the bowel, having diarrhœa and passing wind freely, and, as the autopsy showed, having a large amount of pus in the abdominal cavity, and many adhesions, the utmost that the most ardent advocate of saline treatment could claim would be that it might have relieved by locally depleting the congested blood-vessels; but, surely, this must have been more than offset by the weakening effect of the increased diarrhœa, the increased pain and general irritation produced by the already overtaxed bowel being thrown into violent activity. If acute peritonitis of this character is best treated by large doses of saline purgatives it is the only acute inflammation existing which requires such treatment, for it is universally agreed that elsewhere they call for rest and soothing measures. On the other hand, I do not wish to be understood as altogether opposed to the saline treatment, for in properly selected cases requiring surgical aid I should be quite willing to accept it as a fact that the surgeon's knowledge was paramount, and to use salines.

In conclusion I wish to add that the case has in one particular been very interesting from a pathological standpoint, as an illustration of the wonderfully migratory habits of inflammation—a fact with which I am constantly struck. Here was an inflammation which had its origin in the irritation of the inner coat of the appendix by a concretion; the effect was ulceration and inflammation of all the coats, and perforation at the point of pressure; next came general peritonitis, and this by extension, the process of inflammation attacking contiguous tissues, set up in spots a true enteritis, for microscopical examination showed the presence of extensive inflammation of the entire thickness of the small intestine in pieces studied.

A SUGGESTION AS TO THE ACTION OF OLIVE OR COTTON-SEED OIL IN GALL-STONE COLIC:

Observations on the Use of the Oils and Reports of Cases.[1]

BY DAVID D. STEWART, M.D.,

LECTURER ON THE DISEASES OF THE SPINAL CORD, AND, LATELY, CHIEF OF THE MEDICAL CLINIC, JEFFERSON MEDICAL COLLEGE; PHYSICIAN TO ST. CHRISTOPHER'S HOSPITAL.

WITHIN the past three years the old plan of treating gall-stone colic with large doses of olive oil has

[1] Much of the oil sold as olive oil is really refined cotton-seed oil. The difference in chemical composition and properties is not very great. Olive oil contains a rather larger proportion of the more fluid fat, olein. In one of my cases olive oil was prescribed; in the other cotton-seed.

come much in vogue, and many communications have appeared in the journals at home and abroad as to its efficiency, but no adequate explanation has yet been offered as to its *modus operandi*. The lack of a wherefore might seem a matter of slight moment, in view of its efficiency were it not that, because no plausible theory of the action of the oil has been suggested, the method has not only failed to receive recognition by therapeutists, but has been subjected to much adverse criticism, efforts having been made to bring it into disrepute, the supposed success of the oil being attributed to errors in diagnosis. This last is perhaps due to the fact that in none of the reported cases in which the oil treatment was used has it been stated that calculi were found which by analysis were shown to be true gall-stones, it either being carelessly taken for granted that the concretions passed were of this nature, or it was stated that masses of soap alone were met with.

Excluding the rare instances in which entozoa mislead, it is unquestionably true that to establish a diagnosis of hepatic colic due to the passage of gall-stones or of inspissated bile, the finding of concretions in the feces is not essential: certain unmistakable subjective and objective symptoms determining the matter very readily. But where these are not detailed, and the ability of the reporter both to apprehend the facts and to make proper deductions therefrom is unknown, an element of doubt as to the verity of the diagnosis is present which renders the conclusions reached valueless. Perhaps for this reason the oil treatment of gall-stone colic has until lately received such scant recognition.

Although at first I was altogether sceptical of a method which seemed founded on no sound theoretical basis whatever, and very naturally viewed with suspicion reports emanating from observers who made the extraordinary blunder of mistaking easily recognizable lumps of soap for gall-stones, their physical appearances in the quantities passed when large doses of oil are taken, being such as scarcely to mislead even the most careless,[1] communications favorable to the treatment continuing to appear, some emanating from known reliable sources, induced me, somewhat less than a year ago, to look upon it with favor and to search for an explanation of the efficiency of the oil. On giving the matter a little consideration then, it occurred to me that if the treatment were efficient the effects attributed to the oil were more likely due to a product of its chemical decomposition, glycerin.

That oils and fats are decomposed in the duodenum into their fatty acids and glycerin there seems no doubt, and this decomposition is probably effected by the pancreatic juice through the action of a fat-splitting ferment, steapsin, as was shown by Bernard. It is now well known that the ingestion of a large quantity of oil is succeeded by the presence in the feces of innumerable masses of soap, the base of which is principally sodium,[1] formed no doubt by the union of the fat acids with the alkali of the pancreatic juice and the bile.[2] It would appear not improbable that glycerin so liberated exerts in the duodenum an action similar to that which takes place when it is introduced into the rectum; withdrawing water, and causing hyperæmia and irritation of the afferent nerves of the part with which it comes in contact, thus leading to powerful reflex peristalsis.[3] In addition to the active contraction which would be caused by the presence of glycerin in the duodenum, and which of itself would probably lead to energetic reflex contraction of the gall-bladder, cystic and common bile-ducts, so that concretions lodged therein, sufficiently small to be expelled, would be rapidly passed onward into the bowel, it is not unlikely that the power of diffusion possessed by glycerin would enable it to enter the ductus communis and even the cystic and the hepatic ducts, and, perhaps, reach the gall-bladder and the liver, producing a similar depletion of the vessels there and, reflexly, exciting the muscular fibres of these ducts to contraction. In consequence of this action of glycerin a copious outflow of diluted bile would also probably occur, which would materially assist in expelling the stone. These, I believe, would be the probable results of the introduction of glycerin into the duodenum in a case of gall-stone colic, in which the stone was not too large to pass readily through the duct: its extrusion following and pain ceasing. As I shall subsequently show, by relating two cases in which this treatment was resorted to, oil in large quantity apparently has the power to check hepatic colic by promoting expulsion of the calculus. That this result is brought about neither by a lubrication

[1] It might be well to recall here a fact not generally known, that gall-stones may rarely be perfectly soft and pultaceous, and as susceptible of being kneaded into various shapes as a piece of putty. This form of stone is believed by Harley to be composed of cholesterin in the preliminary stage of crystalline formation. They may easily mislead, resembling, as they often do, dirty-white barleycorns, orange-pips, grapes, etc. See Harley, *Diseases of the Liver*, Amer. edit., pp. 336, 337. A case of this sort is related by Harley, where he mistook two oblong steatomatous concretions, moulded into the shape of lemon seed, for the latter. *Idem*, p. 344.

[1] See report by Wiley in Prentiss's case, MEDICAL NEWS, May 12 and July 28, 1887, and many others scattered through the journals, in which these masses, by analyses, are shown to be saponified oil. In Prentiss's case complete saponification of nearly a pint of oil is stated to have occurred.

[2] The question whether the intestinal canal contains sufficient alkali to unite with a large quantity of fat acids has no bearing on the well-recognized fact that these acids and glycerin are liberated through a decomposition of the oil in the duodenum.

[3] As was suggested by Anacker (Deutsche med. Woch., Sept. 15, 1887), to whom we are indebted for its recent reintroduction into practice as a laxative, by enema.

of the duct in which the stone is lodged nor by a partial solution of the calculus, has been shown by Chaffard, and as these are the only modes of action at all conceivable if oil itself, and not a product of its decomposition, is the efficient agent, it is likely that oil is not. Since no explanation can be offered as to the efficiency of the oil, and it is known that glycerin is formed from it in the duodenum, and since it is probable that glycerin can produce the effects attributed to the oil, it is likely that these are due to glycerin.[1]

Though this suggestion is sufficiently plausible to meet the facts, I should have hesitated to offer it now, unsupported by experimental evidence, were it not that, since it occurred to me, an enforced absence from my work for a number of months has prevented me from carrying out some experiments on dogs, projected last spring, to determine its value. I should not have placed it on record at this time, but that I desire to report without further delay two cases of cholelithiasis recently encountered, about the diagnosis of which there is no uncertainty, and in which oil was resorted to, to relieve the attending hepatic colic. I thought this a fit opportunity to offer my theory of the action of the oil, that the use of what has been an efficient remedy in my hands might be placed on a rational—if yet theoretical—basis.

CASE I.—Mrs. K., aged forty-two, of short stature, weight 185 pounds, had had attacks similar to that for which she sought relief, for six years. These had occurred at intervals of about six months, for the first three and a half years. She was then free from them for two years, but in the previous six months she had had several. The attacks were usually of long duration, and associated with jaundice. The state of cholelithiasis had never been treated, the attacks alone receiving attention from her physician; morphine being freely used hypodermatically and by the mouth. She was not aware of the nature of her ailment and had never been told to search for gall-stones. I was first sent for on September 29th. As I was then absent from the city, Dr. Pottberg called in my place. Her symptoms were those of pronounced gall-stone colic. She had been in great pain for two days. Dr. Pottberg informs me that having once before administered a half pint of olive oil to a case of gall-stone colic, with the result that all pain entirely ceased shortly after without a resort to anodynes, he concluded to use it in this case. After some persuasion the patient was induced to swallow a half pint of oil, no other medication being used, save heat to the hypochondrium. Pain continued very severe for a half hour and then ceased abruptly. A saline purge was taken a few hours after. The feces were not searched for gall-stones, but an inspection of them by Dr. Pottberg the day following the administration of the oil, showed a great quantity of semi-solid lumps which he very naturally looked upon as concretions resulting from the use of the oil.

The patient remained entirely free from pain until the morning of October 3d. An attack then began, as before, with sharp paroxysmal pain in the right hypochondrium; rigors, followed by fever, gastric irritability and flatulence. I first saw her on the afternoon of October 4th. The liver was found to be enlarged and the lower margins painful on pressure, especially in the region of the gall-bladder. The skin was slightly icteroid, but, it was stated, not more so than was usual in the interval of the attacks. A full dose of morphine and atropine was administered, and inhalations of ether resorted to, with digital manipulation of the gall-bladder, followed by hot poultices to the hypochondrium. Heat was also applied to the feet, which were cold. Draughts of hot water containing sodium bicarbonate were taken at intervals. Under this treatment the pain ameliorated after an hour, but soon became intense again, requiring the use of morphine and atropine, hypodermatically, at intervals. On October 6th, jaundice was more decided; stools were pipe-clay colored and urine high-colored. Pain was now very great, and inhalations of ether, manipulation of the gall-bladder and the abdomen seeming to have no effect in promoting extrusion of the stone, she expressed a willingness to have recourse to the oil. She had objected to it at first as, although the former dose had been followed by such prompt cessation of pain, it had been so intensely disagreeable to her, and so difficult to swallow and retain that I had not urged its use. But now, having determined to take it, she did so resolutely, swallowing three quarters of a pint containing a drachm of ether[1] without demurring. The oil was retained, and, to my gratification, pain ceased suddenly and absolutely within three-quarters of an hour. This was the first time I had used oil to relieve gall-stone colic, and though I had faith in the treatment and had formed a theory to account for its efficiency, I still felt no little surprise at the result.

The bowels moved freely, without a purgative, fourteen hours after the oil was taken. I had already begun a careful search for stones, using a sieve consisting of several thicknesses of cotton-netting of a very fine mesh. Every fecal evacuation after the date of my first visit was most thoroughly washed and filtered, and the scrutiny is still as carefully continued by the patient, who has a very intelligent idea of the matter, saving everything for my inspection which at all differs in appearance from the general semblance of fecal matter. The first three passages following the ingestion of the oil contained upward of fifty semi-solid lumps, of various sizes, similar to those passed before. These I had no doubt were concretions of soap. A few were sent to Dr. Leffmann for analysis, who confirmed my

[1] Rosenberg (Fortschritte der Medicin, No. 13, 1889) has recently ascertained an important fact which tends to support my suggestion. He has found, by experiments on dogs with gall-bladder fistulæ, that large doses of olive oil greatly increase the quantity and diminish the consistency of the bile excreted. It would appear inconceivable that olive or cotton-seed oil could have such an effect, save in the manner I have proposed.

[1] The ether was added with the idea of assisting the retention of the oil, and also, of promoting a flow of pancreatic juice.

opinion. In the third passage two gall-stones were found. One, unfortunately, on too rough handling broke into small bits and was lost. It had a similar appearance to the other, though it was a trifle smaller. This latter was about the size of a large pea, somewhat cubical in shape and of a brownish exterior. On light pressure with the finger it crumbled, showing a white, crystalline interior, presumably of pure cholesterin. Sulphuric acid, placed in contact with a small crumb, gave the play of prismatic colors. Another small portion was dissolved in boiling alcohol and the precipitate examined microscopically after evaporation of the spirits: the characteristic rhombic plates of cholesterin were shown. The remainder, quantitatively examined by Dr. Leffman, was found to consist wholly of cholesterin. The patient stated she found what appears to have been another stone, a few days later. It was globular in shape, and about three times the size of the one tested. As it fell into bits on her attempting to rewash it, and as she neglected to save the fragments, I failed to see it. Though some suspicious-looking concretions have been passed since, and brought for my inspection, none have answered to the tests for gall-stones or inspissated bile. The patient has had one or two slight attacks of colic since, but not severe enough to require medical interference. She is on appropriate hygienic and medical treatment to prevent the redevelopment of stones, and to bring about the solution of any remaining.

CASE II.—Mrs. C., aged forty-five, weight 225 pounds, of medium height, presented herself for treatment on October 23d, last. She had had paroxysmal, cramp-like pain in the epigastrium and the right hypochondrium, with flatulence and nausea, for several days. On questioning her, I learned that this was but a very light expression of similar seizures which had affected her for twelve years. The attacks appeared at intervals of from two years to two weeks, and lasted from a few hours to many days. In the past three or four years they had occurred more frequently than formerly, and were of several days' duration. The shorter attacks usually occurred at night. Decided pruritus and jaundice were often present, after the pains had continued for three or four days. She was not aware that she was passing gall-stones, and had never been treated for them so far as she knew.

On examination, I found it difficult to outline distinctly the lower limit of liver dulness, because of the great amount of adipose tissue. It was, however, found to be extended, and the situation of the gall-bladder was exceedingly tender on pressure. Her diet and habits were regulated, and sodium bicarbonate and sulphate prescribed, to be taken in a bitter infusion a half hour before meals. An opiate mixture was ordered, in case the pains became too severe to be borne. She was carefully instructed how to search the passages for biliary concretions.

On the night of October 27th I was summoned to see her in well-developed hepatic colic. The slight pains had continued, with remissions and exacerbations, without growing very severe until the afternoon of that day, when suffering suddenly became so intense that she resorted to dose after dose of the opiate, entirely without relief, as, owing to the great gastric irritability, each was vomited as soon as swallowed. I gave, hypodermatically, a half grain of morphine and $\frac{1}{100}$ of atropine; applied heat to the feet, and afterward to the liver, first attempting digital manipulation of the abdomen in the region of the gall-bladder. Draughts of hot water, containing sodium bicarbonate and essence of peppermint, were also administered. Relief was soon felt, after which she fell into a broken sleep, to be thoroughly awakened, in the course of two hours, by the pains recurring as severe as before. Another half grain of morphine with $\frac{1}{100}$ of atropine was taken—this time by the mouth. This failing to give ease, and it being daylight, she sent for some cotton-seed oil, a full dose of which I had told her might tend to check the pains, should other remedies fail. I saw her at eleven that morning: she was then suffering very acutely. She had taken seven fluid-ounces of the oil at five, but had vomited it at once after it was swallowed. I persuaded her to take ten fluid-ounces while I was with her, adding a teaspoonful of ether to the dose, and administering a tablespoonful of undiluted brandy immediately after. Emesis did not occur again for an hour: then about half the oil was ejected. Shortly before this, or, as nearly so as could be arrived at, forty-five minutes after taking the oil, the pain markedly diminished, and three hours later ceased entirely, indicating that a stone had been passed into the duodenum. A mercurial purge was taken on cessation of the pain, followed six hours later by two drachms of sodium sulphate in hot water. The bowels moved freely that night and the subsequent day, but no stones were found. Though great tenderness, on pressure, was felt over the lower margin of the liver, and especially above the situation of the gall-bladder, she remained entirely free from unprovoked pain for thirty-six hours. At the end of this period it recurred with great intensity. Feeling that the oil had been instrumental in checking it before, she was quite willing to resort to it again, if there was any chance of it being retained; as she constantly vomited all fluids swallowed, there seemed slight hope of this. It occurred to me that cocaine might aid in its retention. Thinking it worth a trial, I prescribed one-third of a grain, with ten minims each of compound tincture of cardamom and spirits of chloroform, in a tablespoonful of water, to be taken a half hour before the dose (a half pint) of oil; and directed that the oil contain a teaspoonful of ether, as before, and that a swallow of undiluted spirits follow the oil. On visiting her again a few hours later, I was told that vomiting had not occurred until three hours after taking the oil, and only then on attempting to swallow some meat broth. The vomit contained but little oil. It was also stated that the pain, which had been excessive, decidedly diminished within two hours after taking the oil, but did not cease entirely until seven hours later. Morphine was not resorted to during this attack. On its termination, the bowels were kept

relaxed by calomel and sodium sulphate, and the feces searched in the most thorough manner—a forty-mesh wire sieve being used to wash them.

As I had directed that every particle passed of the slightest suspicious nature be saved for my inspection, the soapy concretions and all sorts of foreign substances, such as fruit seed, and concretions evidently formed in the intestines from undigested food, were preserved and carefully tested, chemically and microscopically, when their nature was not apparent by inspection. On the fifth day after cessation of the last attack of colic, a triangular-shaped stone, about the size of a beechnut, was voided. It consisted of cholesterin with a nucleus of mucus and inspissated bile: the tests for these being applied by myself and confirmed by Dr. Leffmann. None has been found since, though the search is still being prosecuted with care.

This calculus, and especially the first one tested in the case of Mrs. K., had the smooth, eroded appearance of a biliary concretion that had undergone partial disintegration within the body. As neither of the cases had been under treatment directed to bring this about for more than a few days, it occurred to me that it might be due to some solvent action of a product of the decomposition of the oil. To determine if either soap or glycerin, when brought in contact with gall-stones, would have the tendency to promote softening of their mass and partial solution of their exterior, I took the halves of a very large and firm cholesterin stone, which I had removed two years before (*post mortem*) from a gall-bladder, and placed one in glycerin and the other in a strong solution of sodium soap, keeping both liquids at a temperature somewhat below the body heat, and noted the result in twelve hours. While the portion suspended in glycerin had remained firm in consistence and was altogether unchanged, that in the soap solution had stained the latter very decidedly and crumbled readily when taken between the fingers. This result is not surprising, when it is considered that soda is the alkali of the bile that tends to maintain cholesterin in solution, and that sodium salts, administered for long periods, in cases of cholelithiasis, have the tendency to promote dissolution of gall-stones and concretions of inspissated bile. This little experiment may, in a measure, account for the failure to find gall-stones where search has been properly made in cases of hepatic colic treated by large doses of oil; for intestinal peristalsis, bringing the recently passed stones constantly into contact with warm solutions of soap, may, in some instances, cause their entire disintegration.

Although I do not claim to have fully demonstrated by the recital of these cases that oil is efficient in checking hepatic colic, since the length of time taken by the passage of a stone into the duodenum can never be exactly determined beforehand, yet I think that the prompt cessation of the attacks in Case I., in which oil was used, and in Case II., their less prompt yet really speedy discontinuance, in comparison with the duration of the last few previous seizures, when ordinary means of relief were tried, indicate, when placed with the accumulating evidence in favor of this treatment, that it is not without utility, and that it is at least worthy of intelligent and extended trial—especially when we reflect that none of the methods ordinarily resorted to have much influence in promoting extrusion of biliary concretions. A stone is probably passed into the bowel, through the action of the contractile muscular fibres of the duct in which it is contained, and the accumulation of liquid bile behind it, urging it along. Opium and belladonna in the full doses necessary to allay the pain of colic, and inhalations of ether and chloroform, tend to impede rather than assist expulsion, by arresting peristalsis in the duct. Opium and belladonna tend to retard, also, by checking the formation and outflow of bile. It is true that dilatation of the duct is necessary for digital manipulation of the gall-bladder to be practised with success, yet few, save the most skilled, are able to apply this procedure properly. The abdomen of gall-stone subjects is usually so adipose that it is difficult to feel and still more to grasp the fundus of the gall-bladder, unless much distended—a condition unlikely to obtain unless a calculus has been some time impacted in the common bile duct.

If the theory suggested as to the action of the oil is correct, the method, as now practised, is open to many sources of failure. Glycerin may not in all cases be formed in sufficient quantity to exert its peculiar effects. A free flow of pancreatic juice is necessary for the splitting up of the oil. The pancreatic juice may not be present in sufficient quantity to act on any amount of oil. Belladonna, or its alkaloid, atropine, much resorted to in hepatic colic, suppresses the pancreatic secretion. If full doses are given before oil is tried, the result will be *nil*. Any fluid taken with the oil may so dilute the glycerin formed in the duodenum that its hygroscopic effects on this part will be prevented. The calibre of the offending calculus may be too great to be influenced by the contractions of the duct and a full outflow of bile, induced by glycerin. If further trial justifies faith in the use of oil in the treatment of gall-stone colic, and my theory of its action is proved by experiment, some of these elements of failure may be removed.

The great objection to the use of oil is the difficulty patients have in swallowing and retaining it in the quantites ordinarily administered. The method practised in Case II. might be tried where considerable gastric irritability exists. Whether a less dose than half a pint will be efficient remains to be determined.

It would, I suppose, be useless to administer glycerin by the mouth with an idea of obtaining the result anticipated from the oil; for, because of the hygroscopic properties of glycerin, on which would depend its action, sufficient fluid would be absorbed from the gastric bloodvessels to render it too dilute to be efficient when it reached the duodenum.

2620 N. FIFTH ST., PHILADELPHIA.

A CASE OF INTESTINAL OBSTRUCTION FROM APPENDICITIS, FOLLOWED BY PERFORATION OF THE BOWEL ABOVE THE SEAT OF OBSTRUCTION.[1]

BY CHARLES B. PENROSE, M.D., PH.D.,
OUT-PATIENT SURGEON TO THE PENNSYLVANIA HOSPITAL.

THE usual cause of death in inflammation or ulceration of the vermiform appendix is perforation of the appendix and septic peritonitis. In the case which I am about to report the phenomena which resulted in death were, first, appendicitis, producing local peritonitis and bands of adhesion; second, obstruction of the ileum from these adhesions; and, finally, perforation of the ileum from distention and gangrene above the seat of obstruction.

The patient was a delicate woman, twenty-two years old, with a phthisical family history. She had had no abdominal disease until twenty years of age, when she suffered from an attack of general peritonitis, beginning with right iliac pain and tenderness. She apparently recovered perfectly from this, and continued well until the 17th of last August, when, after excessive ocean bathing, she was seized with pain and tenderness in the right iliac region, accompanied by constipation, nausea, and vomiting. This attack lasted one week, and was relieved by mild saline purgation. Though she left her bed she was not perfectly well, and was never entirely free from pain and tenderness in the region of the cæcum.

Toward the end of September she was again obliged to take to bed: the right iliac pain increased; she had obstinate constipation and paroxysms of pain around the umbilicus. There was no abdominal distention, the abdomen being, on the contrary, rather retracted. Ingestion of food caused abdominal pain, nausea, and vomiting. At first the constipation was overcome with calomel and saline purgatives. It, however, became more difficult to produce a movement, until, by October 10th, there was absolute constipation, or, in other words, complete obstruction. The temperature—which had previously been normal—began to rise a few days before the appearance of complete obstruction, and ranged from 100° to 101.5°. The pulse was about 100. Abdominal distention first appeared when the constipation became absolute. For nine days there was no passage of feces or flatus from the rectum. The other symptoms were gradually progressive. General emaciation rapidly increased, the abdomen became greatly distended, the paroxysms of umbilical pain became more frequent and violent, there being two especially intense attacks—one five days after the beginning of absolute constipation, and the other on the night of the eighth day. The last of these attacks was followed by collapse; vomiting continued with but little intermission, though it never became fecal. She was first seen and operated on by the writer nine days after the beginning of complete obstruction. She was in a condition of collapse, with a quick, feeble pulse, rapid and shallow respiration, and a tense, distended abdomen.

Abdominal section was performed by the median incision. As soon as the peritoneum was opened there escaped through the incision a large quantity of fecal gas, followed by several ounces of very offensive, thin, fecal pus. The intestines were not adherent to the parietes, but all the loops of the small and large intestine in the lower half of the abdomen were united by recent friable adhesions. The pelvis was filled with a large quantity of unhealthy lymph, pus, old and recent blood-clots. In the region of the cæcum the intestinal adhesions were old and strong. One inch from the ileo-cæcal valve the lumen of the ileum was completely closed by a thick mass of inflammatory tissue, which bound the bowel to the posterior wall of the abdomen. The vermiform appendix was imbedded in adhesions; was two inches long, and about one-half inch in diameter. It was hard and rigid, but from the hasty examination made at removal, no sign of perforation was detected. It was unfortunately lost by the nurse. The ileum for twelve inches above the seat of obstruction was hypertrophied, distended, and gangrenous in spots. In a space of ten inches there were two minute perforations on the convex surface of the intestine.

As it was impossible to relieve the obstruction without resection of the intestine, the diseased portion of the ileum—twelve inches in length—was removed. The ileo-cæcal valve and the free end of the ileum were closed by a continuous peritoneal suture. The ileum was then united by lateral approximation with rubber disks to the anterior surface of the cæcum. The abdomen was freely irrigated, and a glass drain was introduced. The patient died a few hours after operation.

I will briefly summarize the points of interest in this case:

The disease began as an appendicitis, probably as a catarrhal inflammation with superficial ulceration. This was followed by local peritonitis, with adhesions around the appendix and cæcum The evidence of this is found in the history of the two previous attacks, which were characterized by right iliac pain and circumscribed tenderness. The adhesions which followed the second attack produced, at first, partial obstruction of the ileum. As the obstruction became more complete the patient began to suffer with paroxysms of umbilical pain, in addition to the ileo-cæcal pain which had characterized his first attacks. Distention and increased pain followed complete obstruction. A few days

[1] Read before the Philadelphia County Medical Society, November 13, 1889.

before death there was probably rupture of an intestinal bloodvessel, and, perhaps, beginning perforation during a violent peristaltic effort to overcome the obstruction. The older clots found in the peritoneum were the results of such a rupture. The perforations discovered at the time of operation probably followed a paroxysm which occurred not many hours before death, for in the exhausted condition of the patient such an accident would cause speedily fatal collapse.

I have reported this case because it adds another to the list so rapidly accumulating which illustrate the dangers that may be avoided by early operation in recognized cases of appendicitis, the operation being not only a curative, but a prophylactic measure.

In pyosalpinx and extra-uterine pregnancy operation was not many years ago deferred until rupture had taken place. We now acknowledge the value of early operation whenever such conditions are recognized. Inflammation of the vermiform appendix is attended with analogous dangers. Most operations hitherto reported have been performed after perforation had occurred, and the patient in many cases was dying of septic peritonitis. Delay is often unavoidable on account of uncertainty of the diagnosis. In other cases operation is postponed because of the delusive hope that the final attack may terminate in temporary recovery as perhaps previous attacks have terminated.

If we recognize, however, that most cases which have a history of recurring attacks of pain and circumscribed tenderness in the right iliac region, with other important though less characteristic symptoms, are due to disease of the vermiform appendix, operation is indicated, either in an interval, while the patient is in fair health, or at the beginning of an acute attack.

I have said very little about the steps of the operation in this case, because the patient died too soon for any determinate result. The rubber disks employed are similar to those which I use for making lateral anastomosis between the ileum and cæcum. Intestinal anastomosis by means of decalcified bone, catgut, or rubber disks, enables us in many cases to avoid the necessity of an artificial anus. The operation is as quickly performed as the formation of an artificial anus, and furnishes an immediate relief to the patient.

THREE CASES OF APPENDICITIS: OPERATION: RECOVERY.[1]

By J. M. BALDY, M.D.,
of Philadelphia.

On a number of former occasions I have taken the opportunity to advance the doctrine of early and prompt surgical procedures, where it seemed likely that the surgeon must interfere eventually. In appendicitis (I use the term advisedly and broadly, for I believe it well proven that the vast majority of inflammatory attacks in this region are such) this doctrine of early operative interference is imperative. In the history of surgery the greatest strides in lowering the mortality and insuring the success of any given operation have been made when the point of operating at a time of election has been reached, and that time of election has been an early one, as a rule. And so it is with the disease under consideration. In the course of progress attention was first directed toward the surgical treatment; then it began to be realized that operations, if they were to prove of benefit, must be done, not as a last resort, when the patient was dying and everything else had been tried and found wanting, but within a certain limit of time, from the third to the sixth day, or at such a time when a certain set of symptoms had declared themselves, these symptoms usually meaning the existence of an abscess. As the truth of these teachings began to dawn on operators, successes following operations began to be reported, until now there are quite a large number on record, many of them in our own city.

In spite of the number of cures by operation, the deaths, both following operation and when no operation has been performed, so far outnumber these, as to leave them as a mere spot on the horizon. At nearly the same time two surgeons, Treves and Senn, illustrious representatives of the progressive elements of England and America, publicly urge another step in advance, a most important one, and support their arguments by illustrative cases. The point chiefly advanced by both is, not to await the time when the patient's life is in extreme danger, but where there have been repeated attacks of inflammation in the right iliac fossa, to elect deliberately a time between these attacks when the patient is in good health and well able to stand the slight shock of the operation. Treves reports the case of a man on whom he did this prophylactic operation, in the *Lancet* for February, 1889. His patient had had three attacks of inflammation, at intervals of about three months, each one more severe than the previous. Treves, finally, to prevent the risks of a fourth attack, opened the abdominal cavity and removed the appendix. This he found tightly bound down with adhesions and under coils of intestine adherent to each other and to the appendix and cæcum. The organ was as thick as a man's thumb and was distended with mucus. It was singularly white in color, a peculiarity I have myself noticed in several cases. Recovery was complete and lasting. In the *Journal of the American Medical Association*, November, 1889, will be found Senn's article. He reports two cases. The first

[1] Read before the Philadelphia County Medical Society, Nov. 13, 1889.

operated upon by himself for five previous attacks of perityphlitis. He found an appendix the size of the thick part of the little finger, but not adherent. On section, after removal, an ulcer one-half inch long by one-quarter inch wide penetrating the mucous membrane of the organ and extending into the muscular tissue, was found. The patient has had no return of the old symptoms. The second case reported by Senn was operated upon by Hoegh, of Minneapolis. There had been at least twelve attacks of inflammation, more or less severe. The abdomen was opened by the advice of Senn, and the appendix, which was adherent, removed. On section, several drops of pus flowed out and two large ulcers penetrating through the mucous membrane were found. Recovery was permanent. Since, and even before, these cases were reported lesser lights were at work, and now there are quite a list of such operations on record. One of these I saw Dr. Bernardy perform on a girl who had had repeated inflammatory attacks. In this case the appendix itself, after being freed from its adhesions, was allowed to remain, it being considered healthy enough to do no harm. The patient made a complete recovery and has remained cured. I have myself, on three occasions, removed the diseased appendix.

During December, 1887, I was called to see Mrs. E., and found her suffering with an attack of peritonitis. She had been in bed much of the time for five weeks. She gave a history of a number of similar attacks during the past few years. An examination of the pelvis disclosed inflammatory disease, and consequently operation was advised. The operation revealed a double chronic salpingitis with general adhesions. To the right Fallopian tube, the vermiform appendix was adherent throughout its entire length, together with a knuckle of small intestine. The adhesions were freed, and after throwing a ligature around the appendix above the diseased part, it was removed. The surfaces denuded by the freeing of adhesions bled freely, and a few silk stitches were put in to bring the peritoneal edges together. The peritoneum was stitched over the stump. The uterine appendages were also removed. Recovery was complete and uneventful. In this case the disease was evidently dependent on the pelvic inflammation. The appendix was perforated in several places, and the whole organ was enlarged to the thickness of one's little finger, and was cheesy and friable.

In November, 1888, I was asked to see Mrs. M., of Trenton, in consultation. She had a history of pain in the right iliac fossa for some years. One month before the present illness she had marked symptoms of extra-uterine pregnancy, with rupture. At the time of my seeing her she was bedridden, and dying of sepsis. An operation disclosed the remains of a ruptured left tubal pregnancy, which was in a state of beginning suppuration. In the right iliac fossa was a mass of adherent intestines, containing in their midst a diseased and universally adherent vermiform appendix. The adhesions were freed, and the appendix found to be as thick as the little finger, cheesy and perforated at two points. It was ligated *en masse*, and cut away close up to the cæcum. The peritoneum was not stitched over the stump. The left side of pelvis was cleared of its diseased tube, and the patient after a prolonged sickness made a complete recovery, and remains to this day a perfectly well woman. No cause was found for the diseased appendix.

During January, 1889, I was called to see Mrs. F. She gave a history of repeated attacks of pain in the right iliac fossa. During the attack in question the pain was worse than ever before. No tumor could be detected, but there was great tenderness on deep palpation. A pelvic examination revealed enlarged, prolapsed, and excessively tender ovaries. I operated by a median incision, being uncertain whether the attacks of pain were not due to ovarian disease. The appendix was found universally adherent under a coil of adherent intestines. The adhesions were freed, the appendix ligated *en masse* close up to the cæcum, and cut away. The peritoneum was not stitched over the stump. Like the other two cases, the appendix was found as thick as one's little finger, or thicker, and was extremely cheesy and friable. No cause was found for the disease. The patient made an uninterrupted recovery, and has since remained well.

In none of these cases was there a mesentery of any length to the appendix.

Here, then, by the prophylatic operation we have a mortality of *nil*. Every case of which I am cognizant has recovered. What a difference between this clean record and that with which we must contrast it! The step will be, no doubt, considered a radical one by many, and there will be raised the usual hue and cry against surgical greed; but until a better record can be shown by any of the older methods, we will proceed on the even tenor of our way, and remove a diseased appendix wherever and whenever it can be found. The world has become reconciled to and looks with complacency on the removal of Fallopian tubes similarly diseased and adherent; and so it will be with the appendix vermiformis. They are even more of a menace to the patient's life than are the cases of salpingitis which we all remove, and the diseases are in many respects similar. It may be argued that these cases were successfully carried through the many former attacks of inflammation, and could be again just as successfully treated without the use of the knife. Granted that they were relieved of former attacks, —but the relief proved in every case to be but temporary; and who is to say where the limit in the number of attacks will be reached, or what one may prove fatal? It certainly is not safe to await pus formation if we can anticipate it; the operations after pus has appeared show sorry results. It was only last winter that this stage was awaited in the

case of a medical student in this city, and the student died.

It will be asked, How can we be certain that the appendix is diseased? To this I can but say that, in my experience, there is no positive, constant sign. The most constant and invariable symptoms that I have observed are pain and tenderness in the right iliac fossa. The symptoms of vomiting, tumor, peculiar drawing up of the knees, etc., are too often absent to be depended upon. If they are present, well and good; they form valuable corroborative signs. But with repeated and persistent attacks of pain and tenderness, of sufficient severity, in the iliac region, nothing else being found to account for them, a diagnosis of pericæcal inflammation is warranted.

HOSPITAL NOTES.

HÆMATURIA.

Abstract of an Original Lecture delivered at the Hospital of the University of Pennsylvania.

By JAMES TYSON, M.D.,
PROFESSOR OF CLINICAL MEDICINE.

The patient presented was a girl of twenty years, a domestic, who enjoyed good health until five weeks ago, when she suddenly began to pass bloody urine, with no other apparent symptoms. When brought to the clinic she was anæmic, but this seemed to be rather a result than a cause. In studying a case of hæmaturia, Dr. Tyson said that the first thing to determine is, whether the hemorrhage is from the kidney or the bladder. In this instance he thought it was from the kidney, because of the intimate admixture of the blood and the urine, the absence of clots and of irritation of the bladder.

Supposing it to be from the kidney, it may be due to a variety of causes. Small hemorrhages are found in acute Bright's disease and chyluria. Malaria in this country is quite a common cause. Impacted calculus, tumors of the kidney, injuries and wounds are also frequently the cause. In tropical countries, parasites in the kidney often excite severe and exhausting hemorrhages. Finally, there occur cases of renal hæmaturia which are unaccountable.

In this case the cause could not be acute Bright's disease, because the amount of blood was too large, and there were no other symptoms of that disorder. For the same reason it could not be chyluria. It is not likely to be caused by impacted calculi, because there is no pain and no attacks of nephritic colic. Dr. Tyson thought it more likely to be malaria, but it could not be definitely settled in this case, as a direct history of exposure to malaria was absent, and the blood had not yet been examined for the malarial plasmodium of Laveran. Parasites in the kidney are scarcely to be thought of in this climate. Treatment, of course, must vary with the cause. The patient should always be put to bed. In malarial hæmaturia, quinine freely administered will generally promptly arrest it. In the absence of a definite cause, gallic acid should be the first remedy used, in doses of 15 grains every 3 hours. Dr. Tyson has had success with subsulphate of iron in ½ grain doses, which he combines with 1-30 grain of sulphate of strychnine. Among the most valuable remedies are the natural astringent mineral waters, such as Rockbridge Alum Water, the water of the Bedford, Va., alum springs, or of Wallowhatoola alum springs, also of Virginia. He related a case which, having resisted all other treatment, appeared to be relieved by electric baths.

MEDICAL PROGRESS.

Fastening Rubber Bandages without Tapes.—The Swiss correspondent of the *British Medical Journal* suggests the following convenient method of keeping rubber bandages in place on the leg, without the use of inelastic tapes, which, by retarding venous circulation, often frustrate the object for which the bandage is applied. The method in question consists in applying the bandage to within six or eight inches of the end, this free end is then thoroughly moistened with water and slipped under the last two turns of the bandage. According to this authority, if the bandage is well moistened, as described, it will more certainly remain fixed than if tied in the usual manner.

Ointment for Conjunctivitis.—*L'Union Médicale* for October 5, 1889, has the following treatment for inflammations of the eye:

Extract of belladonna .	1 drachm.
Mercurial ointment . .	2½ drachms.

This is to be employed smeared above the orbit in inflammation with great pain and in injuries of the eye. Also where pain is due to a foreign body.

Pilocarpin in Gall-stones.—Dr. Lekarskie considers pilocarpin almost a specific in the treatment of gall-stones, basing his opinion on the results of treatment in thirty cases. He administers one-eighth grain hypodermatically once or twice daily. The effect on the pruritus of jaundice is immediate, and adds greatly to the comfort of the patient.—*Bulletin Générale de Thérapeutique*, October 15, 1889.

Iodoform in Scrofulosis.—M. Besner prescribes iodoform to scrofulous children in the following formula:

℞.—Iodoform . . . . gr. jss.
Mel. despum . . . . f℥iv.—M.

Of this, a teaspoonful may be given three times daily. He prefers iodoform to the preparations of iodine, from the fact that it may be used for a longer time without interfering with digestion. Iodine in its elementary form he considers more efficient than the iodides, and prescribes the tincture in doses of one drop diluted with boiled milk.—*Revue Générale de Clinique et de Thérapeutique*, October 24, 1889.

Salicylic Acid in the Treatment of Corns.—Moisten the corn with a solution of salicylic acid, and sprinkle over the surface a layer of pure acid. Cover with a small pad of salicylated cotton and oiled silk. This dressing should be renewed every four or five days until the corn is desiccated, when it is easily removed. One or two weeks' treatment is usually sufficient.—*Revue Générale de Clinique et de Thérapeutique*, October 24, 1889.

Chronic Cystitis.—PROF. MOSETIG-MOORHOF advises the following mixture in chronic catarrh of the bladder:

℞.—Iodoform . . . . . ℥jss.
Glycerin. . . . . f℥x.
Aq. dest. . . . . f℥ijss.
Tragacanth . . . . . gr. iv.—M.

A tablespoonful of this is added to one quart of water and injected into the bladder every third day. Improvement is usually noted after three or four injections.—*Wiener medicinische Presse.*

Hypodermatic Injections of Carbolic Acid in Erysipelas.—DR. PAUL SAMTER, of Danzig, in the *Deutsche medicinische Wochenschrift*, enthusiastically advocates the treatment of erysipelas with injections of carbolic acid, believing that, if used early, it prevents suppuration and other complications. Cases uninfluenced by sufficiently large doses of the acid, he believes, are not instances of true erysipelas, however much they may resemble that disease. The drug is administered in the following formula, and freshly prepared for each case:

℞.—Acid. carbol. } . . . āā ♏ xxij.
Alcohol }
Aq. dest. . . . . f℥ijss.—M.

Of this, from one-half to one syringeful is injected into the healthy skin about an inch from the border of the erysipelatous area. Without pinching up a fold, the needle is thrust obliquely toward the disease, and the solution deposited in the deeper tissues. If not used upon the face, these injections cause but little pain. The diseased surface should be surrounded with a series of such injections from one to four inches apart. To prevent carbolic acid poisoning, Samter advices that with the above treatment a tablespoonful of a 3 per cent. solution of sulphate of sodium should be administered hourly.—*Therapeutische Monatshefte*, October, 1889.

Dangers of Parenchymatous Injections of Goitre.—At the recent Congress of German Physicians and Naturalists, DR. HEYMANN, of Berlin, reported the case of a woman in whom a goitre had diminished to one-third of its former size after injections of iodine, practised twice a week for four months. After the last injection there were great pain, vomiting, loss of consciousness, contractions, and gradually increasing loss of sensibility and movement in the upper extremities, and death followed two days after with signs of cardiac paralysis. No autopsy was obtained.

The author was of opinion that thrombosis had occurred from penetration of the iodine into a large vein, the clot extending to the external and intracranial branches of the internal jugular vein. Heymann had collected sixteen recorded cases of death after parenchymatous injections. The same result may follow from injection of other drugs, *e.g.*, perchloride of iron and ergotin, etc.—*Journal of Laryngology and Rhinology*, November, 1889.

Reduction of Temperature by a Spray of Water.—DR. PLACZEK, in Virchow's *Archiv*, advocates spraying the entire body as an efficient means of reducing temperature. In an animal with high temperature, he succeeded in reducing the same two degrees by spraying the body with one and a half pints of water at a temperature of from 53° to 59° F., and immediately after with three ounces at 95° F. The after-spraying with water of a higher temperature dilates the capillaries, and this induces a consequent loss of considerable body-heat.

Thus in a tuberculous subject whose evening temperature would at times reach 104° the author reduced the same to normal by using somewhat over one pint of water of from 59° to 66° F. The temperature was with ease kept for four hours at this standpoint and then gradually allowed to rise, but not allowed to reach its former high standing.

Compared to the ordinary method of bathing, this treatment has the advantage of simplicity and comfort, factors not to be disregarded in private practice. The patient simply remains in bed, coverings and shirt are removed, a rubber cloth laid under him, and the *modus operandi* proceeded with. As each application does not require more than twenty-five minutes, it can be repeated several times daily.—*Medical Chronicle*, October, 1889.

Treatment of Fractured Patella.—In a paper read before the Royal Academy of Medicine in Ireland, MR. MYLES, after alluding to the unsatisfactory results in treating fracture of the patella with external mechanical means, to the dangers of wiring even under antiseptics, and to the well-known objections to Malgaigne's hooks, describes his own method of treatment thus:

The limb being cleaned, the skin is drawn well up; a small puncture is then made through the skin on either side with a common bradawl; the upper fragment is cautiously drilled from side to side, the drill being constantly kept accurately parallel to the anterior surface of the fragment; through the drill hole a stout nickel-silver pin is passed, its two ends project on either side of the fragment, its centre is buried in the substance of the fragment. The lower fragment is then similarly drilled and transfixed, the skin having been previously drawn well down.

With the pins now in position a powerful grip on the fragments is secured, and it is astonishing how little force is necessary to overcome the muscular contraction. When the fragments are drawn together and fixed in proper apposition, a gauze tape can be passed under and around them in a figure of 8, as in a harelip operation, or the free ends can be securely wired together.

Corrosive lint, a posterior splint and flannel roller completes the dressing, which is not disturbed for five or six weeks.

The advantages claimed for this method are:

1. That it is effective—that is to say, it will keep the fragments in perfect apposition without the tilting incidental to mechanical appliances.

2. It is free from the danger of septic infection, as the joint is not opened.

3. It is easy and simple, requiring no costly appliances.

Comparing this method with Mr. Treves's modification of Malgaigne's hook, Mr. Myles thus summarizes the disadvantages of the latter:

1. The joint is often perforated above or below.

2. The hooks also tend to tilt forward the lower end of the upper fragments as they press the patella from the front and above.

3. They are painful and cumbersome.—*The Dublin Journal of Medical Science*, November, 1889.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

Address the Editor: H. A. HARE, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, including Postage.

PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, NOVEMBER 23, 1889.

THE TREATMENT OF RETENTION OF URINE DUE TO ENLARGED PROSTATE.

ENLARGEMENT of the prostate gland, with its consequent disastrous effects upon the urinary bladder, occupies, unfortunately, a prominent place in the long list of diseases that belong to old age, and, until recent years, all that surgical skill could do for it, no matter how severe might be the suffering it caused, was to deal with it in a manner purely palliative. To be sure, in a certain proportion of cases the use of the catheter has yielded results more or less satisfactory, and, of course, there always will be cases in which it will be found a valuable source of relief. On the other hand, instances will be met with in which the catheter, although it may have been for years employed with none but satisfactory effect, all at once becomes a source of irritation, or infection perhaps, and establishes a troublesome cystitis, which eventually is fatal. For such cases the surgeon should possess radical means of cure.

As a step in this direction the operation of perineal incision for drainage of the bladder, which has been a recognized procedure for at least a decade, was introduced. It holds out the promise of certain relief, but not of cure, and in spite of the good results it has yielded, it possesses the disadvantage of being but a temporary measure. Permanent cure is attainable only through an operation which effects the removal of the hypertrophied prostate, or such part of it as is obviously the cause of the patient's disability. Prostatectomy is an accomplishment of modern surgery, in fact, of very recent years, and, as is generally known, there are three methods in which it has been performed—the urethral, the perineal, and the supra-pubic. Against the first two the strong objections of uncertainity and extreme difficulty of performance must be urged, while the last is an essentially simple operation, and presents the great advantage of permitting the operator to learn through the sense of sight, as well as touch, the precise state of affairs he has to deal with.

At the meeting of the British Medical Association, held at Leeds in August last, there took place a most interesting discussion on the subject of "The Treatment of Retention of Urine from Prostatic Enlargement." It appears in the *British Medical Journal* for October 19. The discussion was opened by Mr. A. F. McGill, Surgeon to the Leeds Infirmary, who presented in a very concise manner an admirable and most instructive paper. Confining his attention entirely to those cases of enlarged prostate in which retention is chronic, requiring habitually artificial relief, the speaker made his remarks in a series of propositions, which he himself discussed, and then invited expressions of opinion from the other members of the surgical section of the Association. Mr. McGill's propositions are the following: I. That prostatic enlargements which give rise to urinary symptoms are intra-vesical and not rectal. II. That retention is caused by a valve-like action of intra-vesical prostate, the urethral orifice being closed more or less completely by the contraction of the bladder on its contents. III. That in many cases self-catheterization is the only treatment required. IV. That when the catheter treatment fails, or is unavailable, more radical measures are necessary. V. That this treatment, to be effectual, should (1) for a time thoroughly drain the bladder, and (2) permanently remove the cause of obstruction. VI. That these conditions are best fulfilled by a supra-pubic rather than a urethral or perineal operation. A table comprising twenty-four cases in which the operation had been performed at the Leeds Infirmary accompanies the paper, and from it we learn with surprise of the excellent results obtained. Considering the fact that the patients were all elderly, some very old and feeble men, the mortality of four cases in twenty-four (16.6 per

cent.) must be considered, as Mr. McGill puts it, "lower than might reasonably be expected." Granting, however, that recovery was the result in so large a majority of these cases, so far as the operation itself was concerned, the question still remains to be answered as to what was accomplished in the direction of radical cure. In reply we have from McGill the following figures, excluding from the twenty-four tabulated cases seven in which the operation was undertaken for the removal of stone and the prostatectomy was incidental: four deaths, three resulting immediately from the operation, and one from pneumonia during convalescence; two cases still under observation, and one lost sight of—fourteen in all—ten remaining in which the final result can be stated. "Of these ten, eight have continued well, but one requiring the passage of a catheter, and that only after excessive drinking." The ninth case was one in which it was found impossible to remove the prostate, owing to its extreme hardness, and in which accordingly only supra-pubic drainage was attempted. The tenth case died ten months after the operation, having, however, been relieved for a time. To have afforded permanent relief in eight out of ten cases seems to us a most creditable showing.

We cannot forego alluding to the very graceful manner in which Mr. McGill acknowledges as the first surgeon to perform supra-pubic prostatectomy Dr. Belfield, of Chicago, the date being October, 1886.

The discussion which was elicited by Mr. McGill's paper was scarcely less interesting, and the unmistakable bent of opinion was in favor of radical operation in properly selected cases of prostatic enlargement.

Let us hope that American surgeons, many of whom have already performed supra-pubic prostatectomy, will give it the fair trial that it so richly deserves. Surely, the above results invite it.

PHTHISIS VENTRICULI.

THE efforts which are made to mark the advance in knowledge of diseases by corresponding improvement in their nomenclature are by no means always successful. On the contrary, it often happens that an enlightened pathology at once discards a number of unsuccessful terms, invented to set forth the essential anatomical or clinical characters of a disease, in favor of well-worn popular designations. Terms like influenza and chorea embody no scientific conception of the pathological processes which they designate. On the other hand, they convey no false views of the nature of these diseases.

The growth of knowledge in regard to diseases of the stomach, which has been so conspicuous in the last two decades, has given rise to a number of new nosological terms, several of which have no adequate *raison d'etre*.

Meyer, who suggests the name "phthisis ventriculi" for the process characterized by progressive atrophy of the glands of the stomach, points out, in a recent number of the *Zeitschrift für klinische Medicin*, the defects of several of these terms. The term "atrophy of the stomach" is altogether inappropriate for a condition in which the organ is very frequently much enlarged, and occasionally presents, whether enlarged or not, decided thickening of its walls. "Atrophy of the glands of the gastric mucous membrane" is objectionable, seeing that the term atrophy conveys the idea of persistence of the wasting structures, while in the condition under consideration the glands themselves wholly disappear. Atrophy of the gastric mucous membrane is a designation hardly applicable to a process in which finally a mere layer of connective tissue replaces the mucous membrane.

The German "Schwund der Drüsen der Magenschleimhaut," which is about equivalent to "obliteration of the glands of the mucous membrane of the stomach," well describes a condition which is the terminal stage of chronic inflammation of this membrane. It is, however, too cumbersome for ordinary use; nor are the processes by which this condition is brought about adequately represented by such terms as "gastritis atrophicans" or "catarrhus atrophicans." As a matter of fact, phthisis begins when inflammation and catarrh have run their course. Nor are the gastritis and catarrh which lead to phthisis specific processes, since any form of chronic gastritis can under certain circumstances end in complete wasting of the mucous membrane. It is not easy to estimate the confusion to which this use of this word catarrh, in defiance of its etymology, has given rise.

In support of the term "phthisis ventriculi" Meyer calls attention to the fact that the lesions by which the secretory functions of the stomach are impaired are associated with changes in the muscularis, which also progressively impair its motor function, and with other alterations in the mucous membrane which in a corresponding manner decrease its

power of absorption. Thus the three most important functions of the stomach, secretion, movement, and absorption, are progressively abrogated by changes in its parenchyma. Such parenchymatous changes in other organs, accompanied by wasting of the whole organism, are spoken of as phthisis — for example, phthisis pulmonum. As secondary changes in the organism at large follow these wasting processes in the stomach, the author regards the name "phthisis ventriculi" as a designation eminently appropriate, especially in view of the progressive nature of the disease.

The terminal condition which is marked by complete abolition of the secreting structures is best described by Ewald's term, "gastric anadenie."

REVIEWS.

A Text-book of Animal Physiology, with Introductory Chapters on General Biology, and a Full Treatment of Reproduction. By Wesley Mills, M.A., M.D., L.R.C.P. Lond., etc. Illustrated. 8vo., pp. 700.

To anyone who knows of Dr. Mills's thorough work in scientific lines, this book seems to be just what such a student of physiology would write, and to give, as he points out in his preface, an opportunity for the grouping together of certain facts which deal with the study of animal function, and not with human physiology, about which we of course know very little. This has always been a favorite theme of the author, and he has inveighed against the use of the words "human physiology" as applied to text-books for a long time, pointing out that nearly all our knowledge of vital function is obtained from the lower animals. We think, however, that there are two sides to the question, one of which Dr. Mills has overlooked in his attack on the terms commonly employed, namely, that to the vast majority of persons animal physiology is of little interest, and that its entire value depends upon its relation to man. To prevent all fault-finding, the correct title of a physiological text-book should be, perhaps, "Animal Physiology as Applied to Man." So far as the ordinary medical student is concerned, very little embryology is necessary, and yet we find a large part of the book, comparatively speaking, is devoted to this subject, showing once more that the author has placed his stamp upon his work. Still further evidence of the direction of his studies is the consideration of the functions of many of the forms of life far removed from man.

In the article on respiration, we are sorry to note that no notice is taken of Marchwald's work on the nervous mechanism of breathing, particularly in reference to the hypothetical respiratory centres in the spinal cord, in which the author evidently has some belief.

In the article on animal movements, which has of late come to be so important a subject, the work of Mr. Muybridge, which is certainly the most valuable, has also been ignored.

These are some of the faults; let us consider some of the virtues of the book. We find that it is the best one of its character extant, dealing, as it does, in a thoroughly clear manner with every subject which it discusses, and although every part may not seem complete, as a text-book for a student it is assuredly thorough enough. Dr. Mills impresses upon nearly every page the fact that he is a teacher, and apparently recognizes the needs of students to the utmost, making his sentences clear and concise. His illustrations are nearly all of them wisely chosen, and while we think that some of the pictures of the lower forms of life, below the mammalia, might have been left out with advantage, this is not a point wherein lies a fault.

Dr. Mills has written a book which is, we fear, too good for its day. Unfortunately, necessity and desire for gain actuate so many ordinary mortals whose souls have no love for science in itself, that unless a book brings to them some practical suggestions for everyday life, they do not care for it. We doubt very much if the ordinary practitioner can gain much from its pages, and the average medical student has so many other text-books claiming his attention that we fear he will not thoroughly appreciate the one before us. The entire work is unusually well printed and bound, but is blemished by the publishers, who have inserted an illustrated catalogue of their publications which adds, with its index, sixty-three pages to the volume.

Wood's Medical and Surgical Monographs. General Orthopedics, including Surgical Operations. By August Schreiber, M.D., Surgeon-in-chief to the Surgical Division of the Augsburg Hospital. 8vo., pp. 345. New York: William Wood & Co., 1889.

This book, which forms part of the series of Wood's *Medical and Surgical Monographs*, is a valuable addition to the literature of orthopedic surgery. The frequency of deformities, and the great advances which have very recently been made in this branch of surgery, render a monograph on the subject of orthopedics and the modern orthopedic operations of value, not only to the surgeon, but to the physician, for it is the latter who in most cases has charge of the early treatment of these diseases. The first chapter is devoted to a consideration of general orthopedic treatment, mechanical appliances, and the surgical operations for the cure of deformities. In the subsequent chapters the special kinds of deformities and the conditions which produce them are considered in detail.

In the treatment of abscesses resulting from caries of the vertebræ, the author recommends the method of aspiration followed by iodoform injections. The statistics of P. Bruns, who had twenty permanent recoveries among twenty-two cases submitted to this treatment, should certainly encourage us to follow his method.

In the chapter on scoliosis due importance is given to the static form of lateral curvature, or to the curvature caused by unequal length or supporting power of the lower extremities. Dr. T. G. Morton has shown the frequency of this cause of lateral curvature in America, and Stoppel has found the same cause present in 76 out of 230 cases. The illustrations of scoliosis are good, and the discussion of the mechanical forces which produce

not only the lateral curvature, but the spiral twisting is thorough and interesting. As the author states, the conception of scoliosis, as a gradual transformation of the previously well-formed spine under mechanical influences, has at present the greatest number of adherents. We take pleasure in reading the advice as to the importance of early diagnosis and treatment in beginning scoliosis, and we heartily agree with the author when he states that "the indifference with which the anxious mother is quieted by the physician consulted for the 'high shoulder' or the 'oblique attitude' of a child with the statement that this will be 'outgrown,' and spontaneously disappear without even making a careful examination, cannot be too strongly condemned."

Chapter V. is devoted to a thorough consideration of deformities of the extremities. The operations of osteotomy for the relief of genu-varum and genu-valgum are clearly described; and the advice in regard to cases suitable for this treatment rather than for gradual reduction by mechanical appliance, is careful and conservative. The statement that the mortality after Macewen's operation for genu-valgum has been three out of 1384 operations, shows the safety of osteotomy under antiseptic methods.

The bibliography which appears at the end of each chapter is a very interesting feature. Our only criticism is that the references are chiefly to German literature: many American and English authorities being neglected.

Wood's Medical and Surgical Monographs. Vol. III., No. 3, August, 1889. The Treatment of Syphilis at the Present Time, by von Zeissl. The Treatment of Inebriety, by Stewart. Manual of Hypodermic Medication, by Bourneville and Bricon. 8vo., pp. 286.

This is one of the best numbers of this series that have so far appeared. In the first place, it is filled with just what the practical physician wants, namely, studies in the treatment of disease. The article by von Zeissl is, we think, unusually clear and to the point. The various modes of treatment are discussed in a fair and impartial manner; the results reached by each school of syphilographers are detailed, and the value of each method clearly pointed out. We do not think that we have ever read in so short a space such valuable material on this subject.

The article by Stewart on Inebriety in the Higher Classes occupies only eleven pages, and is somewhat disappointing. It attempts to deal with a difficult subject in an easy way, and fails. Most of the measures are only what common sense will dictate, and he suggests no new means of treatment.

By far the most important part of the volume is that on Hypodermic Medication, occupying as it does the greatest number of pages, and giving the reader one of the best *résumés* of this subject that has been published. We think that the publishers have been peculiarly fortunate in having given to the English-speaking practitioner such an interesting and useful work.

Many of the articles for use, mentioned, are extraordinary and never so employed, but as the text deals with everything that has, can and cannot be injected under the skin, it is proper that this should be so. The history of the subject is given thoroughly, without being too long and wearisome, and adds materially to the interest of the article. The translator, Dr. Currie, has added useful comments upon those points where he thought they were needed. The article is one which every active practitioner should read and profit by.

NEWS ITEMS.

Medico-Chirurgical Faculty of Maryland. — The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held at Hagerstown on November 12th and 13th. The address of welcome was delivered by Dr. A. S. Mason, of Hagerstown, followed by remarks by the President, Dr. A. Friedenwald, of Baltimore. Papers were read by Drs. J. J. Chisolm, Robert W. Johnson, Edwin Michael, George H. Rohé, William B. Canfield, Joseph T. Smith, Randolph Winslow, T. A. Ashby, S. T. Earle, William Lee, J. N. Mackenzie, and George J. Preston.

Chinese Army and Navy Service.—Cable dispatches state that William N. Pethick, Vice-Consul in charge of the United States Consulate at Tien Tsin, China, has notified the Department of State of an important step taken by Li Hung Chang, Grand Secretary of State for China and Viceroy of the Province in which Tien Tsin is located. Li Hung Chang has decided to establish a medical service for the Chinese Army and Navy on Western models. That he may have the best of these to study, he has asked Mr. Pethick to solicit the help of the State Department in obtaining a complete collection of the present regulations and various official publications for several years past of the medical department of our army and navy, including the organization and management of hospitals and ambulance service, and the Surgeon-General's report on our late war. The proposed service is to be under a foreign Surgeon-General with an adequate staff of assistants. It will include hospitals and dispensaries at various places, a medical school, and native surgeons for the fleet and the military stations of North China. A start will be made, the Vice-Consul says, with a number of young men, educated in the United States several years ago by the Chinese Educational Mission, and who have studied medicine under foreign teachers since their return to China. In accordance with the suggestion of the Vice-Consul, the State Department will ask the War and Navy Departments to provide the documents requested to be transmitted to Li Hung Chang.

The New German Pharmacopœia.—In October the Reichs-Pharmacopöie Commission (Imperial Pharmacopœia Commission) met in Berlin to frame a third edition of the *Pharmacopœia Germanica*, so as to have the work completed for 1890. The scientific discoveries or inventions, and the practical experiences made known in materia medica since the publication of the second edition, will in this forthcoming one be incorporated and rendered available. At the same time it will not undertake, any more than its predecessors, to set forth all those remedial agents which individual German physicians have prescribed and apothecaries have made up. In the preparation of these remedies the most diverse rules and prescriptions have been followed, resulting in inconveniences and errors, sometimes serious to the public

and compromising to the profession. To obviate or minimize this confusion, the German Apotheker-Verein (Society of Apothecaries) has resolved to issue a supplement to the forthcoming Pharmacopœia, which shall deal with all the remedies not given in the official dispensatories, and put the prescriber *au courant* with the latest and most accredited additions to his resources, both as to chemical quality and preparation. The profits accruing to the Society from the sale of this supplement will, it announces, be devoted to a philanthropic purpose.

University of Michigan.—The Ann Arbor *Courier* of October 30, 1889, states that "the special correspondent of THE MEDICAL NEWS credits Dr. Maclean with being in this University nineteen years, when it should be fifteen years. He also credits Dr. Maclean with building up the medical department of the University, when the fact is that the medical department of the University built him up. He was 'discharged' for repeatedly opposing the plans of the Regents of the University, and not because he opposed the retaining of the clinic in the little town of Ann Arbor; and the statement that Dr. Frothingham was elected President of the State Medical Society because of his views favoring the removal of the clinic to Detroit is not true, either. The Doctor was elected to that position because he was entitled to it, having withdrawn the year before in favor of an older man, and also because of his eminence."

Death from Ether.—A death under ether is reported to have occurred at Bellevue Hospital on November 5th. The operation was for abscess in the cervical region. Ten minutes after anæsthetization was begun, asphyxia took place. The kidneys were found, at the autopsy, to be the seat of cystic degeneration.

Resolutions on Death of Dr. C. L. Weed.—At a special meeting of the Deutsche medizinische Gesellschaft of Philadelphia, held on October 17, 1889, at the house of the secretary, the undersigned committee was appointed to convey to the family of our late fellow-member, in the name of the Society, an expression of heartfelt sympathy in their present affliction. The sense of personal loss sustained by the members of the Society, encourages the committee to venture the sending of these words of regret.

Dr. Charles L. Weed was one of the founders of this Society; and its present success is largely due to his untiring energy and to the signal ability with which he contributed to its scientific advance. His attainments were unusual. His premature death broke the promise of a rapid elevation to the highest ranks of our profession. His talents claimed our admiration; his geniality won our friendship. We will cherish his memory, and deplore his loss.

GEORGE A. MUEHLECK,
JOHN S. MILLER,
THOMAS H. FENTON, *Secretary*.

At a special meeting of the Staff of the North Fourth Street Union Dispensary, held October 17, 1889, the undersigned committee was appointed to convey an expression of sincere sympathy to the family of their late co-laborer; and a resolution, indicative of the great loss experienced by them on his death, was adopted.

Dr. Charles L. Weed was chief of the eye and ear department, and his ability and energy built up a most successful clinic in that field. His loss will be keenly felt, both by his patients and colleagues, among whom he was deservedly held in high esteem.

Knowing his character and ability, and high qualities both mentally and morally, we realize most forcibly the great loss his death has been to all, and we can and do offer to his family, in the name of the staff, our most heartfelt sympathy in their affliction.

J. REED CONRAD,
JOHN S. MILLER.

Successful Cæsarean Section.—According to the *Lancet*, DR. MURDOCH CAMERON, obstetrician to the Glasgow Maternity Hospital, has recently performed his third successful Cæsarean section. The patient was rachitic, about 48 inches in height, and had been in labor two days when the operation was performed. Both mother and child were saved.

Recent Appointment.—DR. FRANCIS J. QUINLAN, of New York, was recently appointed Lecturer on Diseases of the Throat and Nose in the New York Polyclinic School and Hospital. He is connected with the Eye and Ear Hospital, and is Assistant Surgeon in the Department of Diseases of the Throat and Nose in the Vanderbilt Clinic of the College of Physicians and Surgeons.

New York Post-graduate Medical School and Hospital.—The Executive Committee of this institution have established a clinic for diseases of the rectum, to be under the care of Dr. Charles B. Kelsey, for the treatment of poor persons suffering from these diseases. Dr. Kelsey will also give clinical instruction in the Post-graduate School on this subject.

It is believed that this is the first institution in New York City to organize such a clinic, which has long been needed. The wide reputation of Dr. Kelsey, founded upon years of special work, will afford a guarantee that the cases will be skilfully treated. Dr. J. Blair Gibbs will assist Dr. Kelsey in this new departure.

The New York Academy of Medicine.—The Anniversary Meeting of the New York Academy of Medicine was held on Thursday, November 21, 1889. The address, entitled, "The Relation of Medicine to some of the Questions of the Day," was delivered by William M. Polk, M.D. This meeting was public, the laity—ladies and gentlemen—being present by invitation.

Yellow Fever at Key West.—DR. JOSEPH Y. PORTER, State Health Officer of Florida, states that about September 21st a case of yellow fever was recognized by the surgeon of the Marine-Hospital Service stationed at this port, in the person of Abraham Horn, a peddler, who was at the time convalescent.

On the 5th of October the same medical gentleman recognized two cases of yellow fever in the persons of Wolff Abraham and his wife; the wife being convalescent, the husband being still in bed.

These above-named cases were reported to Surgeon-General Hamilton as yellow fever. The fourth case was recognized by Assistant Surgeon Geddings, of the Marine-Hospital Service, and Dr. Porter, on the twelfth day of illness, the attending physician, Surgeon Murray, dissenting from this diagnosis.

The fourth and last case is now sufficiently recovered to leave his house, and as it has been three weeks since his seizure and no other cases have arisen in his family, all restrictions of egress and ingress have been removed from the premises.

Every precaution has been used to prevent the spread of the disease, and the infected bedding, and other articles liable to carry infection, that could not be subjected to moist heat have been destroyed and paid for. The premises have also been disinfected and cleaned. The city has been ordered to be cleaned, and all the foul spots disinfected, under the direction of the city health officer, who to-day reports the completion of his task.

At the time and immediately preceding the occurrence of the fever cases there had been an unusually heavy rain-fall at this place, followed by a period of intense heat of about a week. Happily this was of brief duration, and being followed by cool north winds had the effect, to his mind, of arresting any spread of the fever. For the past two weeks the weather has been unusually cool for this place at this season.—*Weekly Abstract of Sanitary Reports.*

Sickness Relief Medical Association.—A mutual benefit organization exists in England for the relief of medical men who fall sick or suffer accident. It is known as the Medical Sickness and Life Assurance Society. It addresses itself chiefly to the junior members of the profession and to those practising in the country districts. It has a capital of $140,000, and is directed chiefly by medical men who serve without pay.

The California State Board of Health.—The legal contest of Dr. J. R. Laine to recover his seat in the California State Board of health, now held by Dr. G. G. Tyrrell, has, according to the *Occidental Medical Times* for November, resulted in the favor of Dr. Laine. However, the defendant will move for a new trial, and delays without end may ensue before the latter can be compelled to surrender his position.

Faith-curing of Contagious Diseases Suppressed.—The Board of Health of Matteawan, New York, having encountered a case of diphtheria that was being neglected by some faith-curing practitioners, declared an immediate quarantine, which was maintained by the police. In this manner the faith-curists were shut out, a reputable physician put in charge of the case, and the child began to improve. Apparently its life has been saved by the expedious action of the sanitary board.

The Paris Exhibition.—American pharmacy has been worthily represented at the Paris Exhibition by Messrs. William R. Warner & Co., of Philadelphia, who were accorded the silver medal of their department (the highest award) for their pharmaceutical specialties.

Danger in the Use of the Telephone.—The frequency with which telephone lines become crossed by electric-light wires carrying strong currents seems to be constantly increasing. Dr. Albert R. Rice, of Springfield, Mass., recently found the wood-work surrounding the telephone in his office on fire, owing to this cause. It was discovered just in time to prevent the destruction of his house. The application of such an instrument to the ear would, of course, produce fatal results, and while many telephones in the large cities have attachments which are supposed to prevent such accidents, the danger is certainly one which should not be overlooked.

Isolation of Dangerous Industries.—The French government is investigating the manufacture of celluloid, which has been found too dangerous to life and property to be unrestricted. Within three years there have been three or more accidents, with loss of life, serious injuries, and destruction of property. The large quantities of gun-cotton at the celluloid works makes the business extra-hazardous, and unfit to be permitted in settled communities. The terrible explosion at a factory in New Jersey, about two years ago, was an unmistakable lesson on the importance of placing such establishments in isolated localities.

The Census of 1890.—Commissioner Porter, of the Census Bureau, has made the following statement regarding the new features that may be looked for in the coming census:

"Owing to improvements in the records of some of the States and to the active coöperation of 80,000 physicians, to whom registers have been sent, the vital statistics will be more complete than it was possible to make them in the census of 1880.

"Among the important new features is a special study of the birth- and death-rates and of the principal causes of death in twenty-four of our largest cities; a special study of the influences of race upon fecundity and mortality, and a special study of the relations of occupation to death-rates and to particular causes of death."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 12 TO NOVEMBER 18, 1889.

The following changes in the stations of medical officers serving in this Department are hereby made:

L. W. CRAMPTON, *Captain and Assistant Surgeon.*—Ordered from Fort Teyon, Colorado, to Fort Sheridan, Illinois.

W. H. CORBUSIER, *Captain and Assistant Surgeon.*—Ordered from Fort Hays, Kansas, to Fort Lewis, Colorado.

IVES, F. J., *First Lieutenant and Assistant Surgeon.*—Ordered from Fort Teyon, Colorado, to Fort Sill, Indian Territory.—Par. 3, *S. O. 167, Headquarters Department of the Missouri, Fort Leavenworth, Kansas,* November 9, 1889.

By direction of the Secretary of War, LOUIS M. MAUS, *Captain and Assistant Surgeon,* having relinquished the leave of absence on surgeon's certificate of disability, granted him in S. O. 249, October 25, 1889, from this office, will, upon being relieved from duty at Fort Porter, New York, as directed in S. O. 242, October 17, 1889, from this office, proceed without delay to Fort Stanton, New Mexico, and report in person to the commanding officer Department of Arizona.—Par. 8, *S. O. 261, Headquarters of the Army, A. G. O., Washington,* November 8, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, NOVEMBER 30, 1889. NO. 22.

ORIGINAL LECTURES.

OVARIOTOMY AND OTHER CASES.

A Clinical Lecture
Delivered at the Rush Medical College, Chicago, Ill.

BY CHARLES T. PARKES, M.D.,
PROFESSOR OF SURGERY.

[Reported by A. J. OCHSNER, M.D., Chief of Surgical Clinic.]

GENTLEMEN: The first patient I bring before you is a woman aged forty-five years.

About four years ago she first noticed a lump in the lower portion of the abdomen, to the left of the median line. This continued to increase in size, slowly at first, but more rapidly during the past few months. Now, the abdomen is distended to the extent of a six months' pregnancy, and is somewhat more prominent on the left side.

Palpation, percussion, and vaginal examination give the usual signs of an ovarian tumor. Menstruation has been irregular lately, and absent during the past four months, during which time the tumor has increased more rapidly, giving rise to shortness of breath and considerable pain from pressure. The patient has been prepared for operation by liquid diet and the administration of laxatives during the past three days, and an enema given six hours ago. She also has had repeated hot vaginal douches to disinfect the vagina to make vaginal drainage safe should it prove desirable. She has had thorough soap and warm water baths. The field of operation has been carefully washed and a moist two per cent. carbolic acid dressing applied to the abdomen twelve hours previous to the operation.

This preparation of the skin is always made previous to operating and will not again be referred to. The abdominal incision is now made through the different layers of tissue without the use of the grooved director. Upon approaching the peritoneum the tissues on either side of the median line are seized with dissecting forceps and the tissues cut between them. This facilitates the work, as it does not ordinarily require more than one minute to enter the peritoneal cavity, there being no danger of wounding any of the viscera.

A small incision is made at first which can be enlarged if necessary by means of scissors, the finger being introduced into the cavity to prevent wounding of the viscera. Upon opening the peritoneal cavity the characteristic bluish-white surface of the ovarian cyst shows itself. The wound is enlarged to four inches; an assistant holds the abdominal walls in contact with the surface of the tumor while I puncture it with a large trocar. The issuing chocolate-colored ovarian fluid is collected in a pan and measures fourteen pints. The trocar-opening in the sac is now closed with Nélaton forceps, and the empty sac drawn out through the abdominal wound. The tumor consists of one very large and a number of small unopened cysts. The pedicle, which is short and broad, is transfixed by a needle carrying a large double silk thread and tied in halves. The ligatures are cut short at once to prevent loosening by an accidental pull upon them. The shortness of the pedicle made it necessary to cut rather too closely to the ligatures, causing some loosening of the latter and consequent oozing. Before cutting the pedicle the stump was caught on either side by a large hæmostatic forceps. The oozing is stopped by again transfixing the stump and tying in halves. The abdominal cavity is now carefully sponged out and closed with five silk sutures, including all the layers of tissue in the abdominal wall. The wound is powdered with iodoform and a dry dressing of iodoform gauze and borated cotton applied.

NOTE.—Patient recovered without unfavorable symptoms, the temperature never reaching 100°. On October 12th, when first dressed, the wound was entirely healed by first intention and all the stitches were removed. On October 26th, the patient was discharged entirely well.

SARCOMA OF GROIN.

The next case is a man, aged fifty, married, and a carpenter by occupation. His habits, previous history and family history are good.

Eighteen months ago, the patient noticed a tumor in his right inguinal region. This has enlarged constantly, and during the past four months very rapidly. It causes much inconvenience and some pain. The right leg is œdematous. The tumor is hard and apparently pulsating in every direction; this, however, being due to its proximity to, and fixation over the external iliac artery. There is no aneurismal bruit and the femoral artery can be plainly felt pulsating below Poupart's ligament.

An incision seven inches long and down to the transversalis fascia is made directly over the centre of the tumor parallel to Poupart's ligament. The tumor is thoroughly exposed by careful separation of the layers of the transversalis fascia, and is found lying upon and surrounding the external iliac vessels and covered by the iliac fascia. It is the size of a fist and has the appearance of a sarcoma. After dividing the iliac fascia over it, the tumor is easily dissected out, exposing the peritoneum and the external iliac vessels and leaving an enormous hole. The wound is sponged out carefully with dry aseptic gauze, and united with deep silk sutures. No drainage is used. Iodoform, iodoform gauze, and borated cotton constitute the dressing.

NOTE.—On October 12th, wound was entirely healed and stiches were removed. On October 21st, patient was discharged entirely well.

TUBERCULAR TESTICLE.

The third case is a man, forty-five years old, Irish, iron-furnace laborer. Fairly well nourished and of

strong frame. His scrotum is inflamed and on the left side contains a tumor consisting of an enlarged testicle and cord.

The tumor has the appearance of a tubercular testicle, and there is a sinus leading from it discharging pus. The surface having been disinfected, castration is performed, the pedicle being tied with catgut. The wound is cleansed of pus as much as possible by profuse washing with pure warm water. A drainage tube is introduced and the skin united. Iodoform, iodoform gauze, and borated cotton, as in the preceding cases, constitute the dressing.

NOTE.—On October 12th, the edges of the wound had united but were somewhat red, and there was a slight amount of purulent discharge. The stitches were removed and a moist two per cent. carbolic dressing applied and changed daily. On October 19th, wound looked well. On the 26th, patient was discharged, cured.

OSTEOMYELITIS OF TIBIA.

The next case is a schoolboy of fifteen years, badly nourished and anæmic. About six months ago he had an acute attack of what was supposed to be articular rheumatism of the left ankle-joint. There was a very painful swelling at the time, which pointed and was opened by the family physician, by eight different incisions, at different times. The sinuses that were thus formed have been curetted, but without benefit. The probe enters the lower end of the tibia through several of the sinuses, striking denuded bone and soft granulation tissue. The diagnosis is osteomyelitis.

An incision six inches long is made down to the tibia on its anterior inner surface. The shell covering the mass of granulations is freely chiselled away, a quantity of granulation tissue as large as a hen's egg and several small pieces of dead bone are removed. The osteomyelitis reaches the epiphysial line, as the largest fragment of dead bone shows the epiphysial junction.

The whole cavity and the sinuses are thoroughly scraped with the sharp spoon. The entire surface of the cavity, all the sinuses, and the skin are washed vigorously with pure warm water, and dusted with iodoform, the wound is packed with iodoform gauze, and an iodoform gauze and borated cotton dressing applied externally. The Esmarch bandage which has been applied is not removed until the dressing is completed. The leg is to be placed in an elevated position for forty-eight hours.

NOTE.—On October 12th the dressings were removed for the first time, with the exception of the packing. The wound was found perfectly aseptic. The packing was left until loosened by the growing granulations.

ORIGINAL ARTICLES.

THE SURGICAL TREATMENT OF VOLVULUS.

BY N. SENN, M.D., PH.D.,
MILWAUKEE, WISCONSIN;
ATTENDING SURGEON TO THE MILWAUKEE HOSPITAL; PROFESSOR OF THE PRINCIPLES OF SURGERY AND OF SURGICAL PATHOLOGY IN THE RUSH MEDICAL COLLEGE, CHICAGO, ILLINOIS.

VOLVULUS constitutes a well-defined and definite anatomical form of intestinal obstruction. This term is used to designate that form of impermeability of the intestinal canal which results from twisting or rotation of one or more loops of the bowel about its mesenteric axis.

Frequency of its Occurrence.—Volvulus, as compared with some other forms of intestinal obstruction, is quite rare. In 1541 cases of obstruction from different causes, collected by Leichtenstern (Ziemssen's *Cyclopedia of the Practice of Medicine*, American edition, vol. iii.), and analyzed with special reference to the anatomical cause of the obstruction, after deducting 178 due to carcinoma, 33 cases only were due to twisting of the bowel, including twists of both the sigmoid flexure and the ileum. Upon another page the same author gives the result of his examinations of 76 cases of volvulus which he has collected, and of this number the lesion was found in 45 cases in the sigmoid flexure, in 23 cases in the ileum, and in 8 cases in the jejunum and ileum combined.

Predisposing Causes.—Volvulus can only occur where the mesentery of the bowel is of abnormal length, and is, therefore, most frequently met with in the segments of the intestinal tract normally provided with a long mesentery, as the sigmoid flexure and the lower part of the ileum. That the relation of the length of the intestinal canal to the mesentery has something to do in the causation of volvulus has been well shown by Küttner ("Ueber innere Incarcerationen," *Virchow's Archiv*, B. 43, S. 478), who has ascertained from his anatomical researches that in persons who subsist almost exclusively on coarse vegetable food, as is the case with most of the peasants in Russia, the small intestine measure from twenty to twenty-seven feet in length, while in persons of German birth the length varies between seventeen and nineteen feet. The same author has also shown that volvulus is much more frequently met with in Russia than in Germany. As the mesenteric attachment to the posterior abdominal wall must be nearly the same in all individuals, as far as its extent is concerned, the occurrence of volvulus will be favored in proportion to the length of the intestinal canal. The nearer the two bars of an intestinal loop approach each other the narrower the mesentery, and, therefore, the greater the risk of rotation about its axis from causes which disturb the peristaltic movements. Sudden or gradual elongation of the intestinal canal from distention, as we observe it in cases of intestinal obstruction and peritonitis, furnishes one of the mechanical conditions upon which the production of volvulus depends, by disturbing the normal relations which exist between the length of the intestines and their fixed points of attachment. It is not uncommon to find in post-mortem records of persons who have died of peritonitis, mention of volvulus as a secondary condition, and in cases of intestinal obstruction it is by no means rare to find the same condition as a secondary occurrence on the proximal side of the primary occlusion. I have met

with volvulus in two of my abdominal sections, where this lesion could only be accounted for by attributing it to elongation of the intestines from distention. In one case it followed a strangulated hernia. The patient was a young man who had suffered for a week from a strangulated inguinal hernia. On opening the sac the strangulated loop was found to be gangrenous; the incision was therefore enlarged in an upward direction, and the bowel brought down until healthy tissue was reached. The part of the intestine leading downward was collapsed, while the portion on the proximal side was only moderately distended. As this amount of distention did not explain the general diffuse tympanites, it was deemed necessary to search for an additional cause of obstruction higher in the intestinal canal. The abdomen was opened by enlarging the incision in an upward direction. About one foot above the seat of strangulation, a mass of intestinal coils was found twisted upon their mesenteric attachments and firmly adherent. Above this secondary obstruction, the intestines were enormously distended and very much congested. In this case the distention of the intestine, commencing at the internal inguinal ring, had caused elongation of the bowel, which in turn resulted in volvulus, giving rise to a speedy aggravation of the symptoms of obstruction. That the volvulus was not of long standing was evident from the fact that the adhesions were recent, and limited to the part of the intestine implicated in the twist. In the second case the volvulus formed after perforation of a typhoid ulcer. I examined the patient three days after the perforation had occurred, and at that time the symptoms pointed rather to volvulus than perforation and peritonitis. The abdomen was opened and the volvulus readily found. A number of loops of the small intestine had undergone a complete twist around the mesenteric axis, and showed evidences of strangulation, and were at the same time enormously dilated. The diffuse septic peritonitis which was present had been caused by perforation of a typhoid ulcer a few inches above the ileo-cæcal valve. The perforation was closed by suturing, the volvulus corrected, and the abdominal cavity flushed with a weak solution of salicylic acid. The patient never rallied fully from the shock and died a few hours after the operation.

Nieberding ("Beiträge zur Darmocclusion nach Ovariotomie," *Centralblatt f. Gynäkologie*, No. 12, 1889) has recently called attention to another cause of volvulus. He has reported a case which occurred in Bumm's practice, where, after an ovariotomy, a volvulus of the small intestine occurred which proved fatal after a few days. During the operation the omentum, which was adherent to the cyst, was separated and a portion excised. The necropsy showed that the raw surface of the omental stump had formed an adhesion to a loop of the small intestine, and above the fixed point a volvulus was found. He reported another and somewhat similar case which had come under his own observation. A large cystosarcoma of the left ovary was removed, in a woman twenty-nine years of age. Before closing the wound it was noticed that the omentum was so short that the intestines could not be covered by it in the region of the incision. At the end of the second day symptoms of acute obstruction set in, the temperature remaining normal. As the symptoms increased in gravity and the ordinary treatment proved fruitless, the wound was opened and a loop of intestine was found adherent to the left margin of the incision, and after this was separated a volvulus was detected. The bowel was untwisted and its contents forced into the segment further down, beyond the seat of obstruction, the detached loop pushed beyond the reach of the abdominal wound, and the abdomen closed. The day after the operation the intestinal canal appeared to be permeable, and gas escaped per rectum, but evidences of peritonitis set in and the patient died with symptoms of collapse. From the foregoing considerations it is apparent that the following three mechanical conditions favor rotation of the intestine about its mesenteric axis:

1. Long mesentery.
2. Physiological or pathological elongation of the bowel.
3. Intestinal adhesions to the abdominal wall.

Exciting Causes.—Among the exciting causes of volvulus Küttner mentions, as the most important, unequal distribution of intestinal contents and exaggerated peristalsis. He never observed peritonitis in any of his cases, even if life was prolonged for five or six days. He asserts that the complicated forms of knotting of the intestines, which are still described in the text-books as rare but distinct forms of obstruction, are only varieties of volvulus. Grawitz (*Virchow u. Hirsch's Jahresbericht*, B. 1, 1876, S. 284) asserts that the immediate cause of volvulus is to be found in an accumulation of intestinal contents above a constricted portion of bowel; that the distended portion of intestine above the seat of constriction undergoes elongation, and that this elongated portion then rotates around its axis. Henning ("Beiträgezur Kenntniss der Pathogenese des Volvulus," Dissertation, Berlin, 1883) firmly ligated the intestines of animals, and injected water above the seat of obstruction. In the small intestine, the distended and elongated coils above the ligature always showed a tendency to rotate upon their vertebro-mesenteric axes, thus producing a volvulus. In the large intestine, on account of the shortness of the mesenteric attachment, the same experiment caused rupture of the bowel before a volvulus could be produced. These experiments

furnish positive evidence that volvulus of the large intestine cannot occur when the mechanical conditions described as predisposing causes are absent. Henning collected a number of cases of volvulus, scattered through the literature on this subject, where, in the post-mortem description of the twisted bowel, it was distinctly stated that the lumen of the intestine was narrowed by some form of acquired or congenital stenosis, which is only another proof in support of the statement that elongation of the bowel constitutes one of the most important conditions in the causation of this form of intestinal obstruction.

Spontaneous Reposition.—We have reason to believe that a violent peristalsis not infrequently produces a volvulus, but when the bowel and its mesentery are of normal length spontaneous reduction occurs as soon as the peristaltic wave has passed. Such a condition gives rise to abdominal pain and a temporary disturbance of the fecal movement. In animals, when I produced volvulus artificially by twisting an intestinal loop completely around its axis and fixing it in this position by suturing, I was never able to produce obstruction, and usually found, subsequently, that partial reposition had been effected by gradual yielding of the sutures and adhesions. The conditions are entirely different when both the intestine and the mesentery are abnormally long, under which circumstances spontaneous reposition seldom if ever takes place. In such cases the mechanical obstruction caused by the twist is soon followed by dynamic obstruction in the segment of bowel constituting the volvulus, caused by the pathological conditions arising from the strangulation. The mechanical constriction which takes place at the point of rotation produces paresis, venous engorgement, œdema, and gangrene. These secondary conditions are followed by distention of the intestine and accumulation of intestinal contents, which cannot fail to aggravate the mechanical difficulties which initiated the obstruction.

Symptoms and Diagnosis.—Primary volvulus is of sudden occurrence, and when located anywhere above the ileo-cæcal valve it is usually attended by severe pain and other symptoms of acute obstruction. Vomiting is a prominent symptom in volvulus of the small intestine, but is often entirely absent when the colon is the seat of the twist.

Poppert ("Zur Frage der chirurgischen Behandlung des Ileus," *Archiv f. klin. Chirurgie*, B. 39, S. 207) reports a case of volvulus of the sigmoid flexure, which had become twisted 180° around its mesenteric axis, where vomiting never occurred from the beginning of the attack to the fatal termination. He also refers to the statement made by Roser, that in cases of volvulus of this portion of the colon vomiting is a late symptom, or may be entirely wanting. Treves found that this symptom was absent in three out of twenty cases of volvulus which he collected.

In Poppert's case it was shown during life, by the introduction of an elastic tube through which the organ was washed out, that the stomach was empty or nearly so. In volvulus of the sigmoid flexure the pain is often referred to the umbilical region and not to the seat of the obstruction. A circumscribed area of tenderness over the surface corresponding to the circumference of the twisted loop is an early and well-marked symptom. A volvulus once fully developed gives rise to complete obstruction, the violent peristalsis above the seat of obstruction only aiding in rendering the occlusion more complete. Diffuse peritonitis is never met with in cases of volvulus unless it has developed in consequence of gangrene or perforation. Localized plastic peritonitis is, however, of frequent occurrence, commencing in the twisted mesentery and extending from here to the intestine. Such adhesions in cases where a number of loops are implicated in the volvulus, or where knotting of the intestine has taken place, frequently offer serious difficulties in effecting reposition, and after successful reposition tend to reproduce the volvulus unless provision is made by special measures against such an occurrence. The occurrence of gangrene of the twisted loop is announced by a small, rapid, feeble pulse and other symptoms indicative of septic intoxication. Professor von Wahl ("Ueber die klinische Diagnose der Darmocclusion durch Strangulation oder Achsendrehung," *Centralblatt f. Chirurgie*, No. 9, 1889) has recently called special attention to an important diagnostic sign in cases of strangulation and volvulus. Schweninger's experimental investigations have shown that meteorismus first takes place in the constricted or twisted loops of the bowel, and von Wahl has in a number of cases been able to make a positive diagnosis of volvulus by percussion, by which he located a circumscribed area of tympanites, which, on opening the abdomen, was found to correspond to the site of the twisted and dilated intestinal coil. As this circumscribed tympanites is one of the earliest symptoms, it should be sought for and its significance recognized before general tympanites sets in, as at that time a correct diagnosis is most important in enabling the surgeon to adopt timely measures for successful treatment. As volvulus occurs usually in some portion of the colon or the lower portion of the ileum its exact location can be readily determined by rectal insufflation of hydrogen gas. This diagnostic measure is of the greatest importance and value before general tympanites has set in. If the volvulus is located at the sigmoid flexure, only a small quantity of gas can be introduced, and after the distention of the colon

below the seat of obstruction the localized tympanites due to the volvulus will be found a little higher up in the abdomen, the twisted loop of the bowel having been pushed in an upward direction by the distended colon. If the cæcum is the seat of the volvulus the insufflation can be continued until the entire colon is fully distended, but the gas cannot be forced into the small intestine. The effect of the insufflation under such circumstances will be to widen the abdomen without increasing its prominence. If the volvulus is situated above the ileocæcal valve the gas will rush from the colon into the ileum with an audible blowing or gurgling sound, and the distention of the lower coils of the small intestine will cause the hypogastric region to become more prominent. In recapitulation it may be said that the most important symptoms and signs upon which a probable or positive diagnosis can be based are the following: 1. Suddenness of attack. 2. Absolute obstruction. 3. Localized area of tympanites. 4. Permeability of intestinal canal to rectal insufflation of hydrogen gas as far as he seat of obstruction.

Prognosis.—A fully developed volvulus—that is, a half to two complete twists—occurring in a portion of the intestine predisposed to such an occurrence by congenital or acquired causes, is never corrected without direct mechanical assistance, and, if left to itself, invariably results in death from intestinal obstruction, gangrene, or septic peritonitis in a short time. The acuteness of symptoms, and the immediate danger to life, increase as the volvulus approaches the upper portion of the intestinal canal. Death results either from exhaustion owing to the incessant vomiting and defective nutrition, or from the pathological changes which occur in the twisted portion of the bowel; the latter consisting in gangrene affecting the entire loop, or from circumscribed gangrenous spots at the point of greatest pressure, resulting in perforation and septic peritonitis. As the gangrene is the result of pressure or strangulation, its rapid occurrence may be expected when the twist is tight—that is, when the intestinal loop has been rotated once or twice around its mesenteric attachment. Death from any of these causes may occur in a few days, and life is seldom prolonged for more than a week.

Treatment.—As violent peristalsis is not only one of the causes of volvulus, but seriously aggravates the local and general conditions after the accident has occurred, one of the first indications of treatment should be to place the bowel as nearly as possible in a condition approaching physiological rest. No food should be introduced into the stomach, and thirst should be quenched by small pieces of ice. If the vomiting is severe, or if this symptom is absent and there is reason to believe that the stomach is not empty, washing out of the organ by means of a flexible tube is indicated, and this simple procedure is often followed by immediate and great relief. The peristalsis is quieted by the administration of some preparation of opium, and if this is not retained by the stomach morphia is administered hypodermatically. The bowel below the volvulus is evacuated by copious injections, which should be given while the patient is placed in Hegar's position. The patient is to be nourished exclusively by rectal enemata. Are there any known means by which reposition can be effected without opening the abdomen? Jonathan Hutchinson, whose views concerning the utility of laparotomy in the treatment of intestinal obstruction are, to say the least, exceedingly pessimistic, in a recent publication ("Records of Intestinal Obstruction, with Especial Reference to Symptoms and Treatment," *Archives of Surgery*, vol. i., No. 1) again calls attention to the value of his method of performing abdominal taxis in the treatment of intestinal obstruction, irrespective of a probable or positive anatomical diagnosis. His method is described as follows: "The first point in abdominal taxis is the full use of an anæsthetic, so as to obliterate all muscular resistance. Next (the bowels and bladder being supposed to be empty) the surgeon will forcibly and repeatedly knead the abdomen, pressing its contents vigorously upward, downward, and from side to side. The patient is now to be turned on his abdomen, and in this position to be held up by four strong men, and shaken backward and forward. This done, the trunk is to be held uppermost, and shaking again practised directly upward and downward; whilst in this position copious enemata are to be given. The whole proceedings are to be carried out in a *bona fide* and energetic manner. It is not to be merely the name of taxis, but the reality, and patience and persistence are to be exercised. The inversion of the body, and succussion in this position, are on no account to be omitted, for they are possibly the most important of all. I do not think that I ever spend less than half or three-quarters of an hour in the procedure."

As Mr. Hutchinson mentions no exceptions, as far as the nature of the obstruction is concerned, we have reason to believe that he advises taxis as above described in the treatment of volvulus. Taxis has a limited field of useful application in some forms of intestinal obstruction, but in the treatment of volvulus it must be looked upon not only as a useless, but also as an exceedingly dangerous, performance. It is difficult to conceive in what manner such gymnastic exercises could effect reposition, while it is easy to understand in what manner the different movements would increase the rotation. Furthermore, volvulus is rapidly followed by text-

ural changes which weaken, and, finally, destroy, the intestinal walls; and hence taxis, as advised and practised by Mr. Hutchinson, would expose the patient to the imminent risk of producing a rupture of the bowel, without promising the shadow of a hope that reposition would be accomplished. Only one mechanical measure suggests itself to me as offering any inducements in effecting the reposition of volvulus, short of laparotomy. Rectal insufflation of hydrogen gas has already been referred to as a diagnostic measure. In some cases of volvulus the rotation of the bowel around the vertebro-mesenteric axis is often less than one complete circle, and before the loop has become considerably changed by the twist a reduction might be effected by dilating and elongating the bowel below the seat of obstruction, thus bringing the same causes to bear which have produced the displacement, but in an opposite direction. This method of reduction should be practised with great care, in the manner described in my work on *Intestinal Surgery*, page 12, and is, of course, only applicable in recent cases, before the appearance of general tympanites and before the bowel has undergone serious tissuec-hanges in consequence of the strangulation. If this comparatively harmless procedure fails in accomplishing the desired object, laparotomy should be performed at once, as every hour of delay increases the danger and diminishes the prospect of a favorable issue by operative interference. Statistics show a fearful mortality of operations done for the relief of obstruction from volvulus, simply because they were performed too late. Oettingen (Dissertation, Dorpat, 1888) has collected five cases of volvulus treated by the formation of an artificial anus, with the result that all the patients died. Of the cases treated by laparotomy, six recovered and thirteen died. The cause of death in these cases was generally due, not to the operation, but to pathological changes in the bowel, caused by deferring surgical interference too long. Laparotomy, undertaken early in the treatment of this form of intestinal obstruction, will show better results in the future. If reposition of the twisted bowel is accomplished by direct measures at a time when the general tympanites is not excessive and the twisted loop has not undergone irreparable tissue-changes, the prospects of a speedy recovery are as good as after any other intra-abdominal operations which now present more encouraging statistics. Early diagnosis and early treatment by laparotomy are the requirements which will insure success in the treatment of volvulus. Treves, in his paper on "The Operative Treatment of Intestinal Obstruction" (*British Medical Journal*, August 29, 1885), claims that this form of obstruction is only aggravated by forcible rectal injections, as such a procedure will tend to tighten rather than to relax the twist. Of the operative treatment, he says that simple laparotomy is an unpromising procedure, but that in the future he will make the incision in the median line, puncture the gut, and attempt its reduction; if this fails, or the result appears unsatisfactory, he will evacuate the involved gut through an opening in the summit of the flexure, unfold the volvulus, and establish an artificial anus, using the opening first mentioned for that purpose. The advice here given I should like to modify by the following suggestions: 1. Never to puncture the gut. 2. Substitute intestinal anastomosis for the formation of an artificial anus. 3. Evacuate not only the twisted loop, but also the bowel for some distance on the proximal side. The strictest antiseptic precautions are urgently indicated in the surgical treatment of volvulus, more particularly if the operation is performed before gangrene or perforation have occurred, as in such cases the surgeon has to deal, in the majority of cases, with an aseptic peritoneal cavity. The stomach and intestine below the seat of obstruction should be thoroughly evacuated before the anæsthetic is administered.

Incision.—A median incision should always be preferred, even if it has been determined beforehand that the volvulus is located at the sigmoid flexure. The first incision is made sufficiently long to permit the introduction of the hand for the purpose of making a brief manual exploration of the abdominal cavity, with a view to determine the existence and exact location of the volvulus. If the cæcum is found distended, it is proof positive that the volvulus is located at the sigmoid flexure. A brief examination of the sigmoid region, if the volvulus is located here, will show that the bowel composing the volvulus is more distended than the remaining portion of the colon, and the twist in the mesentery can usually be felt and recognized without any difficulty. In cases of volvulus above the ileo-cæcal region, the colon will of course be found collapsed and empty.

If the probable diagnosis of volvulus has been confirmed by this manual exploration, or if, after the examination of the most important landmarks in determining the location of the obstruction, no positive conclusions can be reached, no time should be lost in enlarging the incision sufficiently to permit of ready evisceration. As the intestines are usually found greatly distended, it is of the greatest importance to support them well and to keep them covered with moist warm aseptic compresses, so as to prevent injury, especially at the points where they come in contact with the sharp margins of the abdominal incision. The twisted portion of the bowel, on account of its greater degree of distention, will be among the first loops to escape, and it is thus made easily accessible to direct treatment.

Reposition of Volvulus.—Intra-abdominal reposition of a volvulus is not a feasible procedure, hence the necessity of making a large incision and bringing the twisted bowel within reach of sight and direct manipulation for the purpose of dealing more efficiently and safely with the displacement. The danger incident to a few moments' exposure of the intestines is more than counterbalanced by the risks which attend attempts at replacement through a small wound with the abdomen often distended to its utmost by dilated intestines with congested and fragile walls. Reduction is easily accomplished in recent cases without adhesions, and it is not difficult if the adhesions are of recent date. The intestinal loop is rotated in an opposite direction from that of the twist until the unfolding is completed. As a rule, the segment of bowel of which the volvulus is composed contains but little solid or fluid matter, but is distended to its utmost by gas which has been generated within it by putrefactive or fermentative changes since the accident occurred. If there is any difficulty encountered in the unfolding of the distended loop it is advisable to empty the bowel by an incision at least an inch in length, made parallel to the intestine and on its convex side, as through such incision not only the twisted portion but the intestine above the seat of obstruction can be emptied of its contents—a matter of great importance in such cases. After the bowel has been washed out with a warm solution of salicylated water further escape of intestinal contents is prevented by an assistant compressing the wound during the time the surgeon is engaged in correcting the twist. I believe it is absolutely necessary to incise the bowel in every instance where the abdomen is opened for the purpose of reducing a volvulus. Before the incision is made, it may be necessary to place the patient on his side to enable the operator to draw the bowel beyond the rest of the intestinal coils, so that after the incision has been made the intestinal contents can escape into a receptacle without coming in contact with the prolapsed intestines. This position is to be maintained until the intestinal contents which have accumulated about the seat of obstruction can be poured out through the incision. This pouring-out process is accomplished by seizing the highest loop which it is deemed necessary to evacuate, and, by raising it, pouring the contents by the force of gravitation from loop to loop until the incision is reached. I even deem it an excellent plan not only to evacuate as much as posible of the intestinal contents, but also resort to irrigation of the bowel through the incision with a weak warm solution of salicylic acid. Such thorough evacuation of the bowel at and above the seat of obstruction accomplishes three desirable objects: 1. It facilitates the replacement of the intestines into the abdominal cavity. 2. It directly unloads the distended paretic intestine, and thus favors the return of peristaltic action. 3. It exerts a potent influence in preventing putrefactive and fermentative changes in the intestines after the operation. Before the bowel is returned the incision is closed in the usual manner by Czerny-Lembert sutures. If one or more circumscribed points of gangrene are found they should be buried by suturing over them healthy peritoneum when the bowel is returned, with a fair expectation that after removal of the strangulation the gangrene will not extend. If large portions of the intestines or the entire loop show evidences of gangrene, enterectomy has become an unavoidable evil. If, as is usually the case in such instances, the patient is in a collapsed condition, no time should be lost in the restoration of the continuity of the intestinal canal by circular enterorrhaphy, as the same object is attained in a much shorter time by closing both ends of the intestine, and making a lateral apposition by means of decalcified perforated bone disks.

Intestinal Anastomosis.—Cases may occur where it will be found impossible to unfold the volvulus without tearing the bowel, and the question arises, Is it best to resect and suture the ends of the intestine, or to leave the volvulus and establish a communication between the intestine above and below the obstruction? Mr. Hutchinson (op. cit.) reports such a case. A soldier, aged forty-six, in good health, who was in bed in the hospital, after removal of a fatty tumor, two days after operation complained of pain in the back and abdomen. He had not left the bed since the operation. The following day the pain was less; slightly nauseated; constipation; injections and laxatives produced no effect, excepting to increase the sickness. On the fifth day after the attack the retching and vomiting were persistent and distressing. On the seventh day the abdomen was distended and coils were visible. The symptoms became more and more threatening, until death occurred on the tenth day after the commencement of the attack. I will append the report of the autopsy and criticism as given by the reporter:

"*Autopsy.*—Three inches above the ileo-cæcal valve a coil of small intestine was found twice twisted round a portion of the mesentery, and the canal of the bowel was thus completely obstructed. There were no recent inflammatory changes about this part of the intestine, but from the dense and contracted condition of the bowel where twisted, it must have been for some time narrowed at this point. When I moved aside the coils of intestine which lay in front of the obstruction, more or less adherent amongst themselves by means of old and tough peritoneal bands—and when I endeavored to, and after some sorting of the parts, succeeded in unrolling the twisted canal, *I was glad not to have attempted the operation during the life of the patient, for it would have been impossible.* [Italics my own.]

"*Criticism.*—It seems not improbable that in this case

some old adhesions favored the formation of the twist. It may be alleged that an early operation would have found the unravelment not so difficult; but then it must be remembered that the early symptoms were but slightly marked. The case was not considered a serious one until seven days had passed. It is in order to illustrate the vagueness of the early symptoms that I have quoted this case."

I cannot appreciate the reasons for self-congratulation on the part of Mr. Hutchinson for not having made an attempt to save the life of this patient by surgical interference. The result might have been better, and certainly could not have been any worse. The time will come, and is not far distant, when as much blame will be attached to a surgeon who will look on as an idle spectator at the bedside of a patient whose life is in danger from intestinal obstruction, as now falls upon an obstetrician who permits a parturient woman to die undelivered. In the case above quoted I cannot see any cogent reasons why unravelment in the hands of such an able and careful surgeon as Mr. Hutchinson is known to be, would not have succeeded, if not equally well, during the life of the patient as in the post-mortem room. But supposing that unravelment would have been found impossible or impracticable, two plans of treatment were still left for the operator to pursue, and either of them might possibly have become a life-saving measure. As the bowel presented no evidences of gangrene, resection was not to be thought of, but the continuity of the intestinal canal might have been restored by intestinal anastomosis with permanent exclusion of the volvulus from the fecal circulation. Or, if the operator had no faith in this procedure, he could at least have made an artificial anus above the seat of obstruction. An intestinal anastomosis between the intestine above and below the volvulus by means of decalcified perforated bone disks can be done in a few minutes, and at once restores the continuity of the intestinal canal. If such a procedure is chosen in the treatment of an irreducible volvulus, it becomes necessary to make provision for a permanent outlet of the contents of the isolated segment of the intestine which constitutes the volvulus, as the obstruction of both ends of this portion may prove to be permanent. This can be accomplished by making a second anastomosis between the apex of the volvulus and an adjoining intestinal loop in preference to a loop below the seat of obstruction. Such a procedure will establish with but little additional risk a permanent fistulous opening between the twisted portion of the bowel and the fecal circulation, and will prevent any danger that might arise from over-distention and perforation should the obstruction caused by the volvulus remain permanent. In making intestinal anastomosis the lateral apposition with the bone-plates should be preceded by thorough evacuation and disinfection of the intestine. As a matter of precaution a continuous suture, embracing the serous and muscular coats, can be applied around the margins of the disks, thus obliterating the grooves between their margins. In order to hasten plastic adhesions the serous surfaces which are to be coaptated should be freely scarified.

Shortening of Mesentery.—After the reduction of a volvulus has been accomplished by operative measures, it is desirable to protect the patient in the future against a possible recurrence of the same accident in the same place. As an elongated mesentery plays the most important *rôle* in the production of volvulus, this can be done in a few moments with certainty and safety by shortening the mesentery. Resection of the mesentery is out of the question, as such a procedure would in all probability result in gangrene of a corresponding portion of the intestine. Shortening of the mesentery, however, can be effected by folding the mesentery upon itself in a direction parallel to the bowel and suturing the apex of the fold to the root of the mesentery. By this method the floating bowel is firmly anchored and a recurrence of the volvulus is made impossible. The indications for flushing the abdominal cavity and for establishing drainage are the same as in laparotomy for other forms of intestinal obstruction. As a contribution to the statistics of the surgical treatment of volvulus I will append the following case:

Volvulus of the sigmoid flexure; laparotomy; recovery.—The patient was a man, sixty-three years of age, carpenter by occupation, who was placed under my care at the Milwaukee Hospital by his medical attendant, Dr. Walbridge, October 13, 1889. It was ascertained that he was of good habits, good general health, well nourished, but with no tendency to obesity. With the exception of occasional attacks of constipation, which readily yielded to mild laxatives, he had never been sick. The present attack was not preceded by constipation. In the morning of October 6th, while walking around in his room, he was suddenly seized with a severe pain in the middle and lower part of the abdomen. He sought rest in the recumbent position and the pain gradually subsided. At this time the appetite was impaired, but there was no nausea or vomiting. Toward evening he felt somewhat distressed in the abdomen, a circumstance which he attributed to flatulency, as he felt relieved after loosening his clothing. The following morning he awoke free from pain, but on rising the pain returned. He remained quiet all day and suffered only an occasional attack of colicky pain. He rested well during the night, and on the third morning he was again free from pain. He ate a light breakfast and started to resume work at his shop. On his way, however, the pain returned. On reaching his destination the severity of the pain increased and he returned home. The pain yielded to rest, but the abdomen became more distended. The fourth day he was again able

to be about. As the bowels had not moved since the beginning of the attack he took a dose of rhubarb in the evening. As the cathartic did not act by the following morning he took an enema, which brought away a small quantity of fecal matter. The following two days the pain became more severe and the distention of the abdomen greater, with nausea, but no vomiting. He did not consider himself sufficiently ill to call a physician until October 12th, when Dr. Walbridge was called, who, after examination, diagnosticated some form of intestinal obstruction, and sent the patient to the hospital to be placed under surgical treatment. Examination at this time showed that the temperature was normal; pulse 90, soft, and compressible; copious eructations, but little nausea and no vomiting. According to his statement he had not had a proper movement of his bowels since the attack, and no flatus passed per rectum. Abdomen enormously distended and tympanitic over the entire surface; contour of intestinal coils visible at a number of places. It was evident that the obstruction was located low down in the colon, probably in the sigmoid flexure, and it was surmised from the history of the case and the symptoms presented, that it was caused either by a volvulus or a circular carcinoma. Laparotomy was advised, and as the patient at once gave his consent, it was performed the following day, October 13th, about noon. After he came into the hospital the nurse administered two ounces of castor oil in one dose without any appreciable effect being produced.

Operation.—As the patient was suffering at the same time from a chronic bronchial catarrh, chloroform was used in place of ether as an anæsthetic. The temperature of the room was kept at 85° to 90° F. The most careful antiseptic preparations were made, and during the operation rigid aseptic measures were carried out. The abdomen was opened by a median incision half-way between the umbilicus and pubes, and sufficiently large to permit introduction of the hand. Intra-abdominal manual exploration showed in the first place that the cæcum was greatly distended, consequently the examination was continued by exploring the sigmoid region. Below the sigmoid flexure the colon and upper portion of the rectum were found completely empty and collapsed. The sigmoid flexure could be distinctly felt, and was enormously distended and twisted around its mesenteric axis. The twist in the mesentery could be distinctly felt. No time was lost in useless attempts to effect reduction. The incision was enlarged in an upward direction to three inches above the umbilicus. As the intestines escaped they were covered with hot, moist aseptic compresses and carefully supported by two assistants. The small intestine was greatly distended and extremely vascular; the visceral peritoneum had lost its glistening appearance. The colon had become so much distended and elongated that the transverse portion, in the shape of a horse-shoe, was found displaced in a downward direction to near the pubes. The sigmoid flexure was twisted around its mesenteric axis one complete twist. The twisted portion of the mesentery was the seat of a limited plastic peritonitis which had resulted in adhesions. The part of the bowel constituting the volvulus measured at least eighteen inches in circumference, and its walls appeared to be of the thinness of parchment paper. Reposition was very easily effected by simply turning the bowel in an opposite direction to that of the twist until the normal position was restored. Peristaltic action appeared to be almost completely suspended, both in the large and small intestine. It would have been mechanically almost impossible to return the intestines into the abdominal cavity without producing serious injury, perhaps complete rupture of the bowel, hence an incision an inch in length was made into the colon, where the distention was the greatest. The incision was made parallel to the long axis of the bowel and directly opposite its mesenteric attachment. The part of the bowel which had been twisted contained, besides gas, only a very small amount of fluid fecal matter. The incision did not empty more than this part of the bowel. As a large amount of fluid feces had accumulated above the seat of obstruction, this was evacuated by the "pouring-out process," previously described, and in this manner almost the entire colon was emptied. The incised portion of the bowel was drawn well forward, and held in this position by an assistant during the entire time required for unloading the bowel, and thus soiling of the intestines and abdominal cavity was prevented. As far as could be readily done the intestine was subsequently washed out with warm salicylated water. The wound was closed with two rows of silk sutures. The mesentery of the volvulus was at least eight inches in length and was shortened more than one-half by the method described above. Replacement of the intestines was now accomplished without any difficulty, and after drying the peritoneal cavity with sponges wrung out of warm sterilized water the external incision was closed in the usual manner. No drainage. The customary antiseptic compress composed of iodoform gauze and salicylated cotton was applied and the abdominal walls well supported with adhesive strips. Outside of the adhesive strips a layer of common cotton was applied, and over this a snugly fitting binder. Duration of operation nearly an hour and a half. The patient recovered rapidly from the immediate effects of the operation. At 8 o'clock in the evening temperature was 100.5° F., pulse 110. Free movement of bowels; feces liquid, dark colored, and of a very offensive odor. Complained of no pain but a sensation of soreness in the abdomen.

October 14. Temperature 99.5° F., pulse 90. During the night had four fluid passages of the same offensive character. So far, the patient had not been allowed any food by the mouth. Thirst was relieved by giving water in small quantities and frequently repeated. In the evening the patient felt so well that during a brief absence of the nurse he got out of bed and walked around the room.

15th. Temperature and pulse normal. Imprudence on part of patient did not seem to have resulted in any harm. From this time on the patient was allowed liquid food, and after the lapse of another week was placed on the ordinary hospital diet. With the exception of a small parietal abscess

the recovery was not marked by any untoward symptoms. The patient left the hospital three weeks after the operation in perfect health.

CONCLUSIONS.

1. The predisposing causes of volvulus are either congenital or acquired, and consist in elongation of certain segments of the intestine, abnormal length of mesentery, and adhesions.

2. Irregular distribution of intestinal contents and violent peristalsis are the most important exciting causes.

3. Volvulus is most frequently met at the sigmoid flexure and the lower portion of the ileum.

4. Secondary volvulus on the proximal side of other forms of intestinal obstruction is not a rare occurrence; it is also frequently developed during an attack of peritonitis.

5. As a rule, the symptoms are more acute and intense if the volvulus is located above the ileocæcal region.

6. Vomiting in cases of volvulus of the sigmoid flexure is not a constant symptom.

7. The most important physical sign of volvulus is a circumscribed area of tympanites which corresponds to the location of the volvulus, but this sign is only of value before general tympanites has set in, and, therefore, enables the surgeon in many cases to make an early and positive diagnosis.

8. All cases of volvulus should be treated by laparotomy if reposition cannot be accomplished by rectal insufflation of hydrogen gas.

9. Reposition should not be attempted without evisceration.

10. Evacuation of intestinal contents by a free incision should be practised in every case where general distention of the intestines is present.

11. Enterectomy becomes necessary if any considerable portion of the intestinal wall has become gangrenous.

12. Irreducible volvulus should be treated by establishing intestinal anastomosis with permanent exclusion of the seat of obstruction from the active fecal circulation.

13. Recurrence of volvulus can and should be guarded against by shortening the mesentery by folding it upon itself parallel to the long axis of the bowel and suturing the apex of the fold to the root of the mesentery.

THE USE OF CREOLIN IN CYSTITIS OF THE FEMALE.

BY THEOPHILUS PARVIN, M.D.,
PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN IN THE JEFFERSON MEDICAL COLLEGE.

CYSTITIS in women, though not a frequent disease, does occur occasionally, often then causing great suffering, and may become chronic notwithstanding diligent treatment; in some few of the latter cases the affection is so severe and obstinate that the patient's condition is most pitiable.

The great majority of cases of acute cystitis that have come under my observation have been caused by the catheter, either for the reason that the instrument was not made aseptic before its use, or in its introduction septic material from the vulvar secretions or air was carried into the bladder. These patients have been women in childbed, or those upon whom abdominal section has been made, or an operation upon the external sexual organs, upon the vagina, or upon the neck of the uterus been done.

Professor Winckel, in his monograph, *Die Krankheiten der weiblichen Harnröhre und Blase*, remarks that simple hyperæmias, hemorrhages, and catarrhal conditions of the bladder permit a favorable prognosis. "As the entire inner surface of the bladder can be easily irrigated and without special pain, it is generally possible, in uncomplicated cases, to effect a cure in eight to fourteen days."

In the cure of cystitis, he regards the local treatment as the most important. He begins by washing out the bladder with warm water; afterward he employs lime-water, or mucilaginous decoctions, as flaxseed tea, frequently adding salicylic acid (1 : 1000), or employs a 3 per cent. solution of boric acid. "The injection is made by a Hegar's funnel, not held too high, to which an elastic catheter is attached by means of a rubber tube; the fluid remains in the bladder a few minutes, and then, by

lowering the funnel, is withdrawn. The quantity which can be injected depends upon the age of the person and the size of the bladder, and will vary between one-fourth, one-half, and one litre, the bladder being irrigated one to three times daily. As soon as these injections are not sufficient, I use solutions of nitrate of silver, 1–2–3 : 500, or of tannin 0.5–1 : 100, and employ them for weeks in a similar manner." I have given in full the local treatment advised by Professor Winckel, and also the method employed by him in washing out the bladder. The illustration here presented is of Hegar's funnel, an instrument that is invaluable—I had almost said essential—in

the treatment of cystitis in the female. In using it, let the funnel, tube, and catheter be filled with the solution, which should be warm, and the first held so low that no fluid will escape from the catheter before its introduction into the bladder; this precaution is taken to prevent wetting the patient's clothing, while previous filling the funnel and tube is done to prevent the introduction of air into the bladder.

Having found creolin so valuable as a local application in cervical catarrh, and a mixture so useful in leucorrhœa, and reading the statement made by Chéron in the *Revue Médico-Chirurgicale des Maladies des Femmes*, about a year since, that he had cured a urethritis by injecting into the bladder a two per cent. mixture of creolin, I was led to try the remedy in some cases of cystitis. The first patient had been suffering some months with the disease. I used a two per cent. mixture, producing no pain, and having a very satisfactory result. The second patient had acute cystitis following the use of the catheter after the removal of an ovarian tumor: the nurse was an experienced one, and very careful as to the cleanliness of the instrument, but never used an antiseptic solution for washing the catheter. The inflammation of the bladder was severe; frequent removal of the urine was necessary, and it was very offensive and contained a large quantity of purulent matter. Following the example of Chéron, and emboldened by my previous success, I washed out the bladder with a warm mixture of creolin and water, the proportions being the same as before. The irrigation was followed by violent local suffering, which lasted for several hours; the urine, however, had no offensive odor for half a day, and contained less pus. Next day I repeated the injection, but with only one and a half per cent. of creolin. The injection still caused great suffering, and it was not repeated. Nevertheless a cure rapidly followed, no medicines being used internally; in a week the urine was clear and the cystitis had vanished.

It is quite probable that the strength of the mixture had some effect in causing the rapidity of the cure. Nevertheless I would not again, at the beginning of the treatment of cystitis employ the creolin in so large a quantity, but rather a half per cent. mixture, increasing the strength from day to day as the bladder seemed more tolerant or the disease more obstinate.

The cases which I have mentioned, and two others in which I have used creolin, lead me to believe that it will prove very useful in the treatment of cystitis in the female. It probably is not necessary to irrigate the bladder with the creolin mixture oftener than once in twenty-four hours.

Those who are in the habit of using a mixture of creolin in water have observed that while the mixture is readily made, the drug rapidly diffusing itself in clouds, until a milk-colored compound results, have also noted that after a time a considerable portion of the creolin settles to the bottom of the vessel. I think it is very desirable to find some means which, while not lessening the antiseptic power of the remedy, will render it completely soluble in water, for it is quite possible that the severe suffering which sometimes follows vaginal or vesical injection of the mixture arises from some of the drug being deposited upon a peculiarly sensitive part of the mucous membrane.

NOTE ON ACCIDENTAL HEMORRHAGE.

By W. W. JAGGARD, M.D.,
Professor of Obstetrics, Chicago Medical College, and Obstetrician to Mercy Hospital.

This paper is written as a preliminary note on hemorrhage due to premature separation of the normally implanted placenta. Three typical examples of the condition have recently come under my observation, which I beg to describe with particular reference to causation and treatment.

Frozen section of an undelivered parturient eclamptic (Winter). Premature separation of the normally implanted placenta, *a*; an extravasation of blood behind the placenta, *b*.

Premature detachment of the normally implanted

placenta is so uncommon that both Boivin and La Chapelle have denied its occurrence. Out of 22,498 labors at Guy's Hospital, the anomaly was noted but three times, while in 156,100 confinements at the Rotunda in Dublin it was not observed at all. Goodell, in 1870, was able to collect only 105 cases.

CASE I. *Premature central separation of the normally implanted placenta, the effect of trauma, in a IV.-para at the eighth month. Severe internal and external hemorrhage, without rupture of the amnion. Expectant treatment, spontaneous labor eighteen hours after the injury; delivery of a stillborn child. Recovery.*—Mrs. A., thirty-four years old, American, IV.-para, well-formed, healthy woman, of medium stature, weighing about one hundred and thirty pounds. Delivered of a daughter at term, January 2, 1878; of an abortive ovum of three months, July, 1882; of a son at term, January 6, 1885. Date of commencement of last menstruation, December 6, 1886. Course of pregnancy to time of accident, normal.

The patient, a lady of unusual intelligence, has given me the following account of the probable cause of her illness: "August 7, 1887, about four o'clock in the afternoon, while driving in the park, a horse backed against the side of my Victoria, his head coming almost on my shoulder. A terrible pain immediately passed up my spine into the heart, followed by another in two or three minutes. I went home as quickly as possible, the drive occupying probably three-quarters of an hour. I felt very badly all the evening, slept poorly and could eat no breakfast. I was in great distress after breakfast, and laid down upon the sofa until ten o'clock, when hemorrhage began." The patient did not stir from the carriage-cushion, and the trauma must have consisted in jarring of the entire body from the impact of the refractory horse against the vehicle.

Dr. John E. Owens arrived about noon, and invited me to see the case in consultation. At his request I undertook its further management.

Patient was in the first stage of premature labor, pains frequent and forcible. Inspection showed considerable enlargement beyond the norm of the uterine tumor. This increase in volume was asymmetrical, and largely composed of a swelling of the size and shape of the crown of a Derby hat, limited to the right antero-lateral segment of the corpus and fundus. During the intervals between the pains the fœtal body—outlined with difficulty on account of the tense uterine walls—was found to present by the vertex in the left occipito-anterior position. Active fœtal movement imperceptible; the patient stated that she had not felt motion since the accident. Fœtal heart-beats inaudible. Digital examination revealed effacement of the vaginal portion of the cervix, dilatation of the os externum of two fingers' breadth; commencing formation of the bag of waters, and the vertex engaged within the inlet. Free bleeding from the uterus—clots and fluid blood—was present, about one-half litre of clots being removed from the vagina.

The patient's general appearance gave evidence of serious loss of blood—pallid lips, white skin, rapid, feeble pulse. She was lying flat on her back—a position assumed as much on account of dizziness as by reason of the flooding.

The localized pain, the sudden asymmetrical enlargement of the uterus, the signs of considerable internal and external hemorrhage, the precipitation of labor, coming on immediately after bodily injury, all pointed to premature detachment, probably complete, of the normally implanted placenta. The relation of the head to the lower uterine segment, determined by sweeping the finger within the cervix around the presenting part, excluded placenta prævia. During the interval between pains, the circumscribed enlargement of the right antero-lateral segment of the corpus and fundus persisted relatively hard and solid, while the remainder of the uterus became somewhat flaccid. This lump was looked upon as composed of the placenta and blood-clots, separating the organ from the walls of the uterus—an opinion confirmed later by the perfect symmetry of the uterus when emptied.

The nature of the case was so clearly marked that there was no occasion to think of rupture of the uterus, nor of extra-uterine pregnancy.

As uterine contractions were frequent and forcible, and as the external hemorrhage had diminished, it was deemed best to stand by and observe the progress of the case before interfering. The pain steadily increased in force and frequency, the head descended to the pelvic floor, the bag of waters ruptured spontaneously, discharging liquor amnii unmixed with blood, and labor terminated without assistance some six hours after its beginning. For obvious reasons, chloroform was withheld, and the delivery was uncommonly painful.

Puerperium uncomplicated, except by a persistent cephalalgia referred to anæmia, which finally disappeared under the exhibition of iron. At the time of writing, the patient is in excellent health, but she has not since become pregnant.

The fœtus, a well developed male, corresponding to the eighth month, still-born; rigor mortis marked. The afterbirth, along with three litres of blood-clots, spontaneously expelled. The maternal surface of the placenta was thickly covered with firmly adherent blood-clots of recent origin. Upon washing off these clots, the periphery was found smooth, covered with the gray layer of decidua, while the central portion was ragged and torn. The decidua was adherent to the chorion læve, normal. The aperture in the amnion, through which the fœtus passed, was small and equidistant from the borders of the placenta, indicating the high attachment of this organ.

In this case, then, a copious hemorrhage took place behind the centre of the placenta, which peeled off this organ from the uterine wall, and became external by seeking the path of least resistance between the decidua vera and chorion læve. The process must have been purely mechanical, and not in consequence of a sudden decrease in the area of

the placental site, nor of diminution of intra-uterine pressure, nor of dilatation of the lower segment of the uterus.

The urine was perfectly normal, and the careful examination of the placenta and membranes, as well as the antecedent and subsequent history of the case, furnished no evidence of the presence of decidual endometritis (J. Veit). Moreover, it is unnecessary to invoke unusual fragility of the utero-placental vascular connection in the explanation of the bleeding, seeing that a cause adequate to the effect is presented in the severe concussion, even without the adjuvant action of fright. Furthermore, the immediate sequence of the separation of the placenta upon the reception of the injury, before the beginning of labor, must be regarded as demonstrative of this causal nexus.

The cause of fœtal death was probably asphyxia, and not hemorrhage, since the integrity of the fœtal bloodvessels may be assumed (B. S. Schultze, Runge).

Case II. *Premature separation of the normally implanted placenta in consequence of hydatidiform degeneration of placenta in a II.-para at eighth month. Severe internal and external hemorrhage without rupture of the amnion. Accouchement forcé; delivery of a dead fœtus; manual removal of the placenta. Recovery.*—Mrs. B., twenty-seven years old, American, II.-para; strong, well-formed woman; tall, weighing about one hundred and forty pounds. First child, a girl, five and one-half years old. Patient could not give the date of last menstruation, but thought she was about eight months advanced in her second pregnancy.

During the night of June 15, 1888, a severe uterine hemorrhage occurred suddenly, without pain, and in the absence of any apparent cause. Dr. J. A. McGaughey was called, but before his arrival the bleeding ceased. After removing the clots that distended the vagina, and changing the bed-linen saturated with blood, Dr. McGaughey advised rest in the horizontal position, and administered a little opium. He remained in the house until morning. In a few days the patient was up and around as usual. Two weeks later Dr. McGaughey asked me to see the case, in consultation. The uterus corresponded in size to the eighth month, and the fœtus was found presenting by the vertex in the first position. Neither fœtal heart-beat nor active fœtal movement was detected. *Per vaginam* the head could be felt above the inlet (*caput balotabile*), and the placenta was plainly absent from the lower uterine segment. The vaginal portion of the cervix had been lacerated on each side during the first confinement, but showed no change suggestive of impending labor. Urine normal. The opinion was expressed that the bleeding had its origin in partial detachment of the normally situated after-birth, and the patient was advised to go to bed. Sunday night, July 1st, a severe uterine hemorrhage occurred, suddenly, painlessly, and without apparent cause, as in the first instance. Dr. McGaughey and I were summoned. The woman was not dangerously anæmic, but a free flow of blood had saturated the bed-clothing, and the vagina was filled with large clots—old and recent. The vaginal portion of the cervix was unchanged, and uterine contractions absent.

The life of the fœtus being despaired of, and the state of the woman being critical, it was determined to empty the uterus at once. The patient was placed on a table, and Dr. McGaughey gave her chloroform. The bladder being emptied, and the accessible genital tract irrigated with sterilized water, it was found that the index-finger passed with ease through the cervical canal up to the presenting part—a distance of four centimetres. Two, three, four fingers, and, finally, the cone of the half-hand, were successively introduced, until, in the course of thirty minutes, it was thought that the cervix was dilated enough to permit the passage of the child's head without much risk of still further tearing the vaginal portion. The fœtus was then turned by the feet, after Braxton Hicks's plan, the amnion ruptured and a dead fœtus extracted very gradually by the Smellie-Veit method. The liquor amnii, excessive in quantity, was unmixed with blood. During the operation, which lasted nearly one hour, free hemorrhage continued, but upon delivery of the fœtus the wound contracted and the bleeding stopped.

Upon attempting to express the placenta, uncommon difficulty was encountered, so that at the expiration of twenty minutes one hand was introduced within the cavum uteri. The placenta was found attached by its inferior border to the right side of the corpus, near the fundus, while the membranes were intimately adherent to the uterine wall lower down on the same side. The placental edge was easily separated, but it required some time and care to detach the membranes. About one litre of old and recent clots was turned out along with the after-birth.

After the evacuation of the uterus ergot was exhibited hypodermatically, and the fundus gently rubbed until the organ assumed its normal tonus.

Puerperium normal. (The husband has informed me that his wife became pregnant for the third time in June last, but miscarried at the end of the fourth month, in consequence of fright. I have been unable to obtain the ovum, or to gain exact particulars of the event.)

Fœtus female, double harelip, second and third toes of right foot webbed; showed signs of commencing maceration; weight, 822 grammes; length, 33 cm. Cord, 80 cm. in length, normal. The placenta, typical example of extensive hydatidiform degeneration, with old and recent clots intimately adherent to the maternal surface. The hand in the uterine cavity demonstrated the fact that in this case the myxoma was not of the destructive, interstitial character (R. Volkmann). Upon washing off the clots, the maternal surface was seen to be broken up, apparently by the force of the hemorrhage. The decidua, chorion, and amnion, closely united, opaque, greatly thickened, roughened, and tuberose, showing the presence of universal chronic interstitial

decidual endometritis. Weight of placental mass, 399 grammes. The aperature in amnion, through which the fœtus passed, was at the pole of the ovum opposite the placenta. This fact, taken with the actual feeling of the placenta by the hand within the cavum uteri, demonstrates the high or normal placental site.

The origin of the bleeding may have been either fœtal or maternal, or both, since the chorion frondosum as well as the decidua was the site of very marked anatomical changes, quite sufficient to explain rupture of the vascular tunics. The process of placenta separation, so far as spontaneously accomplished, must be viewed as purely mechanical as in the first case, since at the time of occurrence the placenta was normally implanted, the uterus perfectly quiescent, and the amnion intact.

Technically, the plan of treatment adopted in this case ought to be designated, *Accouchement forcé*, since it comprehended "a series of obstetric operations, following the one upon the other, with the object of complete removal of the entire ovum from the uterine cavity at a time when labor had not begun and when the cervix had not commenced to dilate" (Kilian). But the name of "forced delivery" parts with some of its harshness, and the operation itself loses much of its traditional barbarity, when the need of prompt action is urgent and when the cervix is the soft, plastic organ of a multipara. In this particular case, although labor had not commenced, still the lower uterine segment was formed, the short, soft, vaginal portion the site of a bilateral laceration, and the cervical canal easily traversed for its entire length by the index finger. The indication for immediate arrest of bleeding was clear and pressing. Moreover, the extraction of the child was performed slowly. Finally the patient made an excellent recovery, and examination of the vaginal portion some weeks later revealed no aggravation of the original tear.

CASE III. *Premature, central detachment of the normally implanted placenta, from trauma, in a primipara, at the seventh month. Severe internal and slight external hemorrhage without rupture of the amnion. Artificial induction of premature labor by intra-uterine colpeurysis, spontaneous delivery of a dead fœtus; recovery.*—Dr. Frank Cary has kindly written the following history:

Mrs. X., American, thirty years old, married two years, first pregnancy, medium stature, weight one hundred and ten pounds. Date of commencement of last menstruation December 30, 1888; quickening April 30th. Course of pregnancy up to the time of the accident normal. August 5th the patient drove all the morning: in the afternoon she took a long walk. During the walk, on suddenly elevating her foot a considerable distance to tie her shoe-string, she felt a sharp pain in the region of the abdomen. Half an hour later, on reaching home, irregular pain set in, which she did not regard as "labor pains." At this time there was a slight hemorrhage. At midnight Dr. Cary was called. He found the uterus enlarged beyond the degree in correspondence with the time of gestation, in a state of tonic contraction that persisted throughout the night. Hemorrhage from the uterus was slight and the vaginal portion of the cervix unchanged; fœtal heart-beats not audible. The patient was placed upon her back and morphine exhibited hypodermatically. At eight o'clock the next morning the external hemorrhage increased slightly in severity, and Dr. Cary asked me to see the case in consultation. The uterine tumor, symmetrically ovoid in shape, now extended to the ensiform cartilage and the lower borders of the false ribs, the uterine walls appeared tense, like a drum-head, rather than contracted, as in a tonic spasm. Fœtal heart-beats and active fœtal movements not perceptible. On account of the extreme distention of the uterus, it was impossible to palpate the placenta, or the fœtal body. Labor pains were notably absent.

Upon vaginal examination, the head was found filling out the lower uterine segment, caput mobile and about to engage within the pelvic inlet. The vaginal portion of cervix—3 cm. in length, relatively dense, os externum passable by the tip of the index finger—showed signs of beginning effacement and dilatation. Blood was oozing in a small stream through the os externum, and clots were felt by the finger-tip in the cervical canal.

The woman's blanched lips, pallid skin, feeble, frequent pulse, and tendency to syncope indicated that considerable intra-uterine hemorrhage had taken place or was occurring.

The nature of the condition seemed to be perfectly clear—intra-uterine hemorrhage from complete or partial detachment of the normally implanted after-birth. This diagnosis was based upon a number of particular facts—the history of pain localized in the abdomen following upon muscular exertion; the sudden, considerable, symmetrical enlargement of the uterus; the abrupt cessation of active fœtal movements; the disappearance of the heart-beats and the external hemorrhage. The relation of the head to the lower uterine segment, completely filling it out, and the absence of any body like the after-birth upon palpation of the convex vault of the vagina, negatived the notion of placenta prævia.

The indication for treatment was also plain—the evacuation of the uterus, and the arrest of hemorrhage by the natural mechanism of contraction and retraction. It was feared that simple puncture of the amnion, and more or less sudden diminution of intra-uterine pressure, in the case of a greatly overdistended organ with a relatively unchanged vaginal portion, might result in an increase of the internal bleeding, notwithstanding the manual compression of the uterus through the abdominal parietes and the use of ergot. Moreover, recent experience has demonstrated the feasibility, and provided the means, of the safe and rapid dilatation of the normal cervix uteri during the second half of pregnancy.

Although the urgency of the indication was ad-

mitted, it was deemed permissible to observe the case for a short time, in the hope of the spontaneous occurrence of premature labor. At the expiration of two hours, as no sign of labor pains appeared, and as the uterine tumor had grown slightly larger, it was determined to interfere.

Accordingly, the woman was placed on a table in the position for lithotomy. After emptying the bladder, the vagina and lower cervical canal were thoroughly irrigated with sterilized water. Then, after a little preliminary dilatation with the index finger, a sterilized Barnes's rubber bag, No. 2, wrapped around a Hegar's bougie and anointed with vaseline, was passed through the cervical canal until it was securely placed within the lower uterine segment, between the head above and the undilated vaginal portion of the cervix below. Tepid water was gradually injected into the water bag until the lower uterine segment was put upon the stretch. In this way, it was possible to substitute adequately the bag of water, not yet formed. Care was taken to expel bubbles of air, by allowing a little of the water to run out after each injection. By degrees, four teacupfuls of water were introduced within the bag, changing its characteristic shape into that of a globular balloon about eleven centimetres in diameter. At the same time, the tube from the bag was drawn taut so as to cause the fluid wedge to descend the cervical canal after the fashion of the normal bag of waters. Uterine contraction became perceptible in three-fourths of an hour, and the increase in general intra-uterine pressure produced a sensible effect in driving the tampon still further down into the undilated cervix. At the expiration of an hour, the lower end of the balloon appeared at the os externum, followed by larger peripheries, until the bag passed out of the effaced and fully dilated cervix into the vagina, whence, in its distended shape, it was withdrawn by gentle traction through the vulvar orifice, two hours after it had been introduced. Upon the escape of the bag from the vulva, some inconsiderable loss of blood occurred. Upon examination, the cervix was found effaced and completely dilated; the bag of waters, perfectly formed, protruding into the vagina, and the vertex presenting in the left occipito-anterior position.

Labor pains being strong and efficient, and the head securely plugging the cervical canal, the amnion was ruptured and the liquor observed to be unmixed with blood. Spontaneous delivery of dead child and placenta occurred one hour later. About three litres of large blood-clots, all of recent origin, were expelled with the placenta. No anæsthetic was used, but the patient complained of no unendurable pain until the head was about to pass the vulvar orifice. Retraction of the uterus, although normal, was reinforced by ergot and massage, as in the first two cases. Puerperium normal. At the end of two weeks, when the patient rose from her bed, Dr. Cary examined the vaginal portion of the cervix and reported a trivial fissure of the os externum, one centimetre in length, on the right side, easily within the physiological limit.

Fœtus, female, well-formed, marked rigor mortis; weight 1701 grammes; length 45 centimetres; placenta and membranes normal in structure—no anatomical evidence whatever of antecedent endometritis; weight 284 grammes. The maternal surface of the placenta presented the same anatomical picture as that described in Case No. I. That the placenta occupied its normal site is evident from the fact that the rent in the membranes through which the fœtus escaped, was at the pole of the ovum opposite to the placenta. It is fair to postulate in this case, the same source of hemorrhage, the same mechanism of placental separation, and the same mode of fœtal death as that mentioned in detail in Case No. I.

From the point of view of etiology, the first and third cases are of special moment, since they show that premature separation of the normally implanted placenta sometimes occurs as the effect of trauma, not necessarily severe, in the absence of textural changes in the decidua or fœtal envelopes. The dominant significance of inflammatory change of the decidua in the determination of this accident has been abundantly demonstrated by J. Veit, Winter, Fehling, and others; so that in the second case the chief point of interest consists in the nature of the condition, myxoma of the chorion frondosum, uncommon so late in pregnancy.

Concerning treatment, the first case shows that spontaneous labor may occur so soon after the detachment of the placenta that interference is not required in the interest of the mother. The second and third cases, respectively, illustrate the value of *accouchement forcé* in multiparæ, and of intra-uterine colpeurysis in primiparæ, when labor is not imminent and when the mother's life is threatened from loss of blood. All three cases indicate that the accident is commonly fatal to the fœtus, but that the maternal death-rate need not be large if the cases are seen in time and if the conditions are favorable for operation.

2330 Indiana Avenue.

REMARKS ON SLIGHT CONTINUED DIARRHŒA AND ASTRINGENT INJECTIONS IN ITS TREATMENT.

By WILLIAM PEPPER, M.D.,

PROVOST AND PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE AND CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

I have elsewhere spoken of slight continued diarrhœa as occasionally the cause of irregular continued fever, which is doubtless dependent upon the local catarrh producing the intestinal disturbance. In these cases the general health suffers markedly, and the general symptoms are, of course, more prominent than where such slight diarrhœa is afebrile in its course. Indeed, in many cases, the habitual looseness of the bowels is of so slight a degree, that it can scarcely be regarded as more than one symptom of intestinal dyspepsia; but a careful study of the evacuations will usually show conclusively that

in addition to the imperfectly digested matters, and the excessive amount of serum, there is, at least occasionally, a notable amount of gelatinous or stringy mucus, demonstrating the fact that, either as cause or effect, local intestinal catarrh exists. I fancy all must meet, as I often do, with cases where such slight local intestinal catarrh has existed for a considerable period, attended with progressive failure in flesh and strength and color, and yet with few or no digestive symptoms, save that daily, or with few exceptions, the evacuations are liquid. Such patients may scarcely make mention of this intestinal condition. They may come to you complaining of the failure of general health; they may even say in response to your question that the action of the bowels is very regular, so that it is only upon questioning that one learns that the daily evacuation is of a diarrhœal nature. Of course, more frequently the condition is better appreciated by the patient, and they will report that for many months they have been in the habit of being disturbed early in the morning, and even being awakened by an urgent call to stool, when the movement passed is of a liquid or semi-liquid character. This may be the only movement during the day, or there may be one or more shortly after breakfast. There is occasionally at the same time abdominal discomfort, or quite sharp colicky pains. During the remainder of the day the patient may be quite comfortable and free from any disturbance or unpleasant sensations. Appetite may not be impaired; and I have frequently had such patients consult me after a continuance of such a condition for months or even for several years, and had them state that their diet continued unchanged, and that they practically ate everything they desired. In other instances, the more observant patient will have noticed that certain articles of food or certain beverages are apt to be followed by a greater degree of subsequent disturbance. Upon the whole, however, the influence of diet is rarely recognized as being of much moment. During this time there is a slowly progressive failure in general tone and condition, easily explicable by the fact that there has been a daily loss of a certain proportion of nutritious matter, and that the long existing local irritation has exerted an injurious reflex effect upon the system. Anæmia develops to a high degree, and there is loss of strength, so that exertion causes fatigue more readily. There is undue sensitiveness to cold and damp, and if the patient has observed closely he will have detected that the degree of diarrhœa is very subject to to atmospheric influences.

The tongue is usually clean, and gastric digestion well performed. The abdomen is often full, and on ordinary palpation may appear indolent everywhere. Careful palpation with the tips of the fingers will, however, frequently show points of tenderness over the colon, especially in its descending portion. The evacuations, as already stated, vary in number, amount, and consistency. There may be days when well-formed stools are passed, or days may pass without the bowels being moved. Usually, however, there is at least one evacuation daily of distinctly less consistency than normal, and careful and repeated examination will show the presence of an undue amount of intestinal mucus. When a slight cold has been taken, the only evidence may be, not in any catarrh of the air-passages, but solely in a slight increase in the looseness, and in the appearance of a much greater amount of mucus for two or three days. It generally happens that such patients will report that they have received considerable medical treatment for the condition without being relieved, having taken a great variety of astringents, and having been placed upon a great variety of diets, but all without effecting any permanent improvement. The degree in which the general health has suffered varies greatly; sometimes the patients appear in good condition, while at other times their appearance strongly suggests grave organic trouble, or even malignant disease.

As an illustration of the more severe results of this trouble, the following may be quoted from a very large number of cases in my case-books:

Mrs. C., of Elk Co., Pa., was never very strong herself, and had been weakened by domestic griefs. She was subject to intestinal dyspepsia, and during the spells of this would sleep badly. She consulted me in 1886, and six years previously she had catarrhal fever, and since then frequent diarrhœa, and for the previous year this had been almost constant. Her stools were habitually thin. They varied from two to five a day, and were moderate in amount. There was rarely any pain, and there was no soreness on ordinary examination. Her appearance indicated grave malnutrition, and suggested deep-seated organic or malignant disease. Examination of the abdomen gave negative results, with the exception of points of tenderness along the descending colon. The urine was normal. The heart and lungs were healthy.

Examination of the rectum showed no ulceration. She had pursued many varieties of treatment, having consulted a number of physicians, and had obtained temporary relief from systems of restricted diet, or from astringent remedies, but the trouble always returned. Her gastric digestion was fair. I instructed her carefully in every detail of personal hygiene, and excluded from her diet all fruit, acids, and rich or indigestible articles. She took for breakfast finely ground grits with a chop or small piece of steak, stale bread with a small amount of butter, and a glass of milk and hot water, equal parts, slightly sweetened. For dinner she took beef or mutton roast or broiled, or chop or steak, or soft egg, boiled rice, or macaroni, or tapioca, stale bread, and, as at breakfast, a glass of cambric tea, and for dessert a little simple pudding. For supper, soft egg, stale bread and

butter, and cambric tea. Rigid care was given to her dress, to the avoidance of draughts, to the restriction of night air admitted to her chamber. A broad flannel bandage was worn around the trunk over the abdomen. Each day, after the first movement, she injected one ounce of warm water containing one or two grains of sulphate of zinc, with from five to ten drops of deodorized tincture of opium, according to the amount of looseness. She lay down for half an hour after this injection, and always retained it, and she was also directed to lie down and rest after each meal. Internally she took a powder of six grains each of bismuth subnitrate, and of Scheffer's pepsin, one hour after each meal. The injections produced an immediate good effect, and she was soon able to omit the bismuth and begin the use of emulsion of cod-liver oil, with liquor acidi phosphorici. Her improvement was very gratifying, and in the course of two months the diarrhœa was entirely under control. She was unable to bear either iron or arsenic even in the smallest quantities. But by continuing careful hygiene and diet she has regained good health, and has had no return of diarrhœa.

The point which seems especially interesting in these cases is the prompt benefit derived from small astringent and sedative injections, even when careful examination shows that there is no ulceration of the rectum. Examination of this part should always be made, but in the vast majority of cases nothing would be detected. The condition is apparently a circumscribed catarrh of the colon, especially in its descending portion. The amount of liquid I habitually use in the injections is too small to reach directly even this part. It is altogether probable that a larger part of the success in treatment is due to rigid care in details of personal hygiene and in diet. The gastric digestion is not impaired by the use of astringent or sedative remedies by the mouth, and only such remedies are given as will improve this digestion, and help nutrition. But after all allowance is made for this, the fact remains that in these cases of continued slight diarrhœa from catarrh of the lower colon, remarkable benefit will be found from the use of small mild injections such as above named. I have even had the extraordinary statement made to me by a patient who complained of slight daily looseness for years, for which he had tried change of climate, and many physicians, that the trouble was completely and permanently arrested after five or six such injections. I never use more than two ounces of liquid, or more sulphate of zinc than one and a half, or, at the most, two grains to the ounce of water, and usually less. The amount of deodorized laudanum is graduated to the degree of looseness. A second injection, later in the day, given a few minutes after one of the subsequent movements may be required in more severe cases. These remarks do not apply to more grave cases of chronic diarrhœa, nor to cases where the lesion is in the upper bowels. I refer only to the cases described in the above remarks. But observation will show that these cases are numerous, that they often prove rebellious to ordinary methods of treatment, and that the proceeding here advised is very useful.

CLINICAL MEMORANDA.

SURGICAL.

A Case of Cystitis, Pyelitis, and Perinephritis.—My excuse for reporting the following solitary case is the unusual train of symptoms, the particularly happy result following the lumbar incision, and that it may perhaps throw light on some obscure case with which a fellow practitioner is wrestling:

Mrs. F., æt. twenty-six years, became pregnant with her first child in August, 1885. She was the subject of an unusual amount of vomiting, and through the entire nine months apparently vomited everything she swallowed. Certainly she had constant vomiting, ended only by her accouchement.

There were no other annoying conditions; urination was frequent, but not more so than is usual, and there was no incontinence or dysuria.

Labor came on during the evening of April 19, 1886. Pains rapidly increased in force. The head was delayed when partially rotated, and forceps were used to end the labor. The forceps were on the head certainly less than fifteen minutes. There was a slight tear in the perineum which was immediately stitched. The urine was drawn with a clean silver catheter about noon the following day.

The catheterization gave rise to an unusual amount of pain, and *pus* was withdrawn with the urine. A soft-rubber catheter was used at the next catheterization, but gave about as much pain as the silver one; pus being withdrawn this time also.

The pain caused by the use of the catheter was so great that it was not employed again, but when the urine was passed voluntarily the dysuria was frightful. Micturition became frequent, and was dreaded by the suffering patient.

The case was viewed as one of puerperal cystitis, but the usual remedies were absolutely without effect.

The patient was in her room for four weeks, and a greater part of the time entirely quiet. As soon as any movement occurred urine was voided with frightful pain and tenesmus. When the sufferer went about her household duties she was forced to use a napkin, for walking, rising from a sitting posture, or jolting in a carriage, caused an uncontrollable desire to urinate, each time accompanied with the terrible pain.

Systematic washing of the bladder was undertaken, but with no better results than with the administration of internal remedies. The only relief obtained was from the injection into the bladder of a solution of cocaine, twenty grains to the ounce. About half a drachm of the solution was used at each injection. The patient was taught to use the syringe, and in that way could get some hours of comfort. Sometimes the application of a pledget of absorbent cotton soaked in the cocaine solution and applied to the urethral outlet would quiet the bladder. As soon as the effects of the cocaine wore away, how-

ever, the pain returned, so the bladder was almost constantly under the influence of the drug.

During the autumn of 1886, about six months after the labor, the patient was suddenly seized with severe pain in the region of the right kidney. The pain was so intense that it caused syncope, but was speedily relieved by a hypodermatic of morphia. This pain occurred at varying intervals until the end of the trouble.

In the spring of 1887 she again became pregnant, to be delivered in January, 1888. It may be remarked that marital intercourse was always excessively painful. The second child presented by the breech, and the labor was short and without accident. After this the pain increased to such an extent, and such large doses of cocaine were necessary to control it, that it was decided to stretch the urethra.

Dr. William Taylor performed the operation in April, 1888. The bladder was carefully examined, was found much thickened, bleeding profusely on being touched with the finger, but no growth was discovered.

Forty-eight hours after the operation the patient was seized with a chill, and great pain and tenderness over the right kidney. There was no dulness in this region, and the pain and tenderness gradually disappeared.

The effects of the operation were gratifying. There still remained a great amount of burning and there was dribbling, but the almost unbearable tenesmus disappeared and did not again return. The amount of ardor urinæ was so great, however, that cocaine continued to be used, though in greatly lessened amounts.

During the following months pure blood, in small quantities, was passed without much pain. The urine was repeatedly examined. Pus was always found in large quantities and some blood, *but never any tube-casts.*

The case dragged along, sometimes better, sometimes worse, until December 29, 1888. On that day the patient was again seized with a chill, and pain and tenderness over the right kidney. The next day her temperature was 102°. There were still pain and tenderness; the amount of the urine was diminished to less than a pint in twenty-four hours. It was almost free from pus and still without tube-casts.

At this juncture, Dr. Ross Bunting saw the patient with me, and continued in attendance until her recovery.

A diagnosis of occlusion of the ureter was made. The pain still continued, tenderness increased, and the temperature gradually rose to 103°; at which point it remained almost constantly.

Professor William Osler was called in, and made a careful examination, but failed to find any fulness or increased dulness in the region of the kidney. The septic condition remained, and the patient failed steadily.

Professor Osler saw her frequently, but we were unable, from physical signs, to determine positively the presence of pus. At the end of the third week, however, there was increased dulness and the edge of the kidney could be felt in the flank.

Professor Agnew saw the case at this juncture, and, with the assistance of Professor J. William White, made an incision on the right side, between the eleventh and twelfth ribs. A large amount of laudable pus was evacuated, and the edge of the quadratus muscles was found eroded. The kidney could be felt and seen anteriorly, and, as it appeared in good condition, was not removed. No stone was discovered.

The day after the operation the temperature was normal, and continued so. The drainage tube remained in position four weeks, and, as at that time there was no discharge, the tube was removed—its track healing in a few days. Immediately after the operation the dysuria disappeared. There was never any urine discharged from the lumbar incision.

After getting up, the patient rapidly gained flesh, and had no unpleasant symptoms, and to-day is in perfect health; not having had a particle of pain with micturition since the day of the operation. Her urine is normal in quantity and quality; micturition is performed normally.

There can be no doubt that the case was originally a cystitis of severe type, that during the Fall a mild pyelitis developed, with an acute exacerbation after the urethra was stretched, finally occlusion of the ureter, retention, increased inflammatory trouble in the distended pelvis, and perinephritis either by the rupture of the pelvis in the post-nephritic space, or simply by inflammation by contiguity.

The use of cocaine in this case is worthy of especial mention. It was, as stated, the only drug that gave the least relief, which, though temporary, was the only comfort the patient obtained. The amount used was large. At times there were constitutional effects; always if the dose exceeded one grain or one grain and a half. On two occasions, after an exceptionally large dose had been administered by myself, there were alarming symptoms of collapse. The patient is entirely free from the cocaine-habit.

M. H. FUSSELL, M.D.,
One of the Physicians to the Medical Dispensary of the University of Pennsylvania.
189 GREEN LANE, MANAYUNK.

Memoranda of Several Cases of Hernia.—The following brief notes of hernial cases have considerable value from a statistical point of view, and are therefore recorded. The cases all occurred in the surgical wards of the Philadelphia Hospital during the term of Dr. A. W. Ransley, the writer being at the time resident surgeon.

J. S., white, male, æt. forty-seven years, was admitted August 7, 1886, with a strangulated left inguinal hernia. The patient stated that the strangulation had taken place a few hours before, but at time of admission there had as yet been no positive evidences of true strangulation. Examination showed a congenital absence of the testicles from the scrotum, and on either side the gland could be felt in the canal at the external opening. On either side, above the testicle, was a hernia of the intraparietal variety. That of the left side lay above and along Poupart's ligament, extending almost to the anterior-superior spine of the ilium, and was large, hard, and painful. Efforts at reduction were practised without success until the following morning, when it was deemed necessary to perform herniotomy. The incision extended over the mass for three and a half inches. The sac was firm and distended with bloody serum, and the intestines dark, but firm. After the strangulating band at the internal ring had been divided, the intestine was returned to the abdominal cavity, the wound dressed carefully, and subsequently the patient made a good recovery.

The co-existence of both non-descended testicles and these two herniæ is unique, and suggestive of the possibility of the accidental conversion of the ordinary type

of inguinal hernia into one of the intraparietal form by imperfectly performed radical operations ending in the closure of the external ring only, or by such procedures as invagination of the testicles.

The following case is of interest because of the age of the patient and the mode of reduction:

B. K., a white male, aged eighty-six years. When admitted he was suffering from a large strangulated left scrotal hernia. The mass was quite firm, large, painful, and tender—the pains passing upward from the tumor to the umbilicus. The point of strangulation was at the external ring, the constriction being evident from the surface, a marked tumescence on either side of the band. Efforts at reduction having failed, an incision was about to be made, when it was suggested that an endeavor to overcome the constriction be made from without after the manner of Sentin. The finger gradually but firmly passed into the mass near the ring, presently was able to detect the margin, and within a few moments to hook its end beneath the edge of the ring. Slow, gradual, and firm traction upon the margin in a few minutes caused a sudden marked relaxation, and the hernial mass was easily reduced. A few days of absolute rest with low diet completed the case favorably.

A third case, also of interest from the age of the patient, is as follows:

A. R., a white female, aged eighty-eight years. The hernia was of the umbilical variety, and at the time of admission the history pointed to strangulation having taken place forty-eight hours before. Taxis having failed, an incision was made at once over the mass and the strangulated knuckle of gut returned to the abdominal cavity without opening the sac, the strangulation having been caused by the gut being sharply folded over the margin of the ring in escaping from the abdomen. After a slow, uneven convalescence, the case finally made a full recovery.

ALLEN J. SMITH, M.D.

332 S. SEVENTEENTH ST., PHILA.

OBSTETRICAL.

Ante- and Post-partum Hemorrhage in the Mother. Hemorrhage from Penis of the Child on the Third Day.—On February 15, 1889, at about 1.30 o'clock A.M., I was called to attend Mrs. C. P. R. in her fourth confinement. She was of about medium size, apparently healthy, aged twenty-five. The three previous pregnancies were normal and labors easy. The first half of the last (fourth) was almost entirely devoid of symptoms. During the second half there arose some slight nervous disturbances. Just before labor pains began she arose from bed, and on returning, a large amount of blood passed for two or three minutes, followed by uterine contractions and cessation of bleeding. There was also some blood found in several places on the floor, showing that she began to flow while out of bed. On examination the os was found slightly dilated. Labor pains occurred at frequent intervals until near morning, when they ceased. After the effects of the night's sickness passed off the patient was around the house as usual. Three days later another gush of blood came on in the night, and without warning, to be again followed by labor pains for a short time. On the following morning a third hemorrhage took place; this time followed by true labor pains, which proved effectual at about 8 P.M. During the second stage of labor I gave several five-drop doses of ergot to increase the pains, which were growing weak and ineffectual. This soon revived the flagging powers of the uterus and caused the expulsion of the child. After the birth of the child contractions of the uterus ceased and bleeding began. I thereupon gave a dose of ergot and proceeded to deliver the placenta. This took perhaps, fifteen or twenty minutes, bleeding continuing until removal was accomplished. After the hemorrhage ceased the patient was extremely weak and presented some symptoms of syncope, such as nausea and temporary loss of sight—which, however, soon passed away after the administration of stimulants. No more bleeding occurred, the patient gradually improved and made a good recovery as regards hemorrhage.

On the tenth day after delivery she had a chill and fever, accompanied by severe neuralgic pains in the lower portion of the abdomen; but quinine, opium, and calomel soon checked the malarial disease.

The baby was a large male child—to all appearances well developed and strong. During the first two days after birth he slept and nursed well. The third night he was restless. At about nine or ten o'clock in the morning of the third day, while the nurse was bathing him, he had a copious discharge of blood from the penis. It was ejected with such force that it struck the head and shoulders of the nurse. She grasped the penis and compressed it, apparently checking the bleeding. Being immediately summoned, I found the child fretful, but not bleeding. On examination of the penis phimosis was discovered. The preputial orifice would just admit an ordinary silver probe. But where did the blood come from? and what the remedy? were the questions. I believed that the contracted prepuce had become partially occluded, and that the consequent straining on micturition, combined with some capillary defect, had caused a hemorrhage into the bladder, and finally a discharge of blood through the urethra. That being the case, circumcision would be the remedy. Accordingly, in the afternoon, assisted by Dr. A. D. Lowell, I operated. Just before the operation the infant had another discharge of blood. We found nothing abnormal about the prepuce, nor was there any more bleeding than is usual in such operations. After dressing it in the ordinary manner we left at about four o'clock. At seven in the evening I returned and found the dressings completely saturated with blood. My supposition then was that I had a bleeder to deal with, and, of course, despaired of saving his life. On removing the dressings the blood was seen oozing from the cut surface, with no hemorrhage from the urethra. Styptics were without avail, so I removed a stitch from the right side, and on separating the skin and mucous membrane, found a spot about the size of a dime, from which the blood oozed like water from a sponge. I pinched up a fold of the bleeding surface with forceps, and applied a ligature. This immediately checked the bleeding, which never returned. The mystery was now solved: the blood had come from this area of defective capillaries, and bleeding was more free after circumcision than before, because pressure was removed. The child lost a large amount of blood and, of course, was very weak, but he made an uninterrupted recovery.

REMARKS.—I have never before met with such a case of hemorrhage in an infant, nor seen a similar case re-

ported. During the first and second days of the child's life—as afterward stated by the nurse—his urine caused a peculiar orange-colored stain, which was undoubtedly due to the admixture of blood.

The spot of defective capillaries was on the right side of the penis, about a half or three-fourths of an inch from the end of the prepuce. The bleeding before circumcision would necessarily be slow; and as the tissues became gorged with blood it would naturally press toward the end of the penis, where, meeting with some resistance, the blood would accumulate and, finally, be discharged by the forcible straining. This process would consume some time, hence the two intervening days without decided hemorrhage.

L. V. ROMIG, M.D.

ROGERS PARK, ILL., Oct. 4, 1889.

HOSPITAL NOTES.

THE LATEST LISTERIAN METHOD IN THE DRESSING OF WOUNDS.

Abstract of a Clinical Lecture
Delivered at the University Hospital, November 20, 1889.

BY J. WILLIAM WHITE, M.D.,
PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA.

AFTER operating upon a case of adenoma of the neck, removing the tumor, explaining the reason for the operation, and the method employed, Dr. White continued as follows:

Although this operation is now nominally completed, the most important part, in my judgment, remains to be performed, viz., the placing of the wound in the best possible condition for rapid healing. The aim of the surgeon, after every operative wound, is, of course, to secure union by first intention.

Any persistent form of irritation is a source of suppuration in wounds, and the different antiseptics which have been employed have not been free from the charge of contributing to the occurrence of excessive inflammation by their own irritant action. The typical antiseptic must, therefore, be as nearly as possible devoid of irritating properties. It must he germicidal—that is, it must possess the property of destroying the micro-organisms. It must have an inhibitory power—that is, it must prevent the development of such organisms. It must be stable—that is, it must not disappear by volatilization from the dressing after they are made, or after they are applied to the wound.

In the old Listerian method carbolic acid was the antiseptic employed; but this had the objection of volatility as well as great slowness of action as a germicide. Corrosive sublimate, which succeeded it, was stable and acted with rapidity, but was exceedingly irritating, and, in addition, was precipitated by the albumin contained in the serum of the blood. This precipitate, it was discovered by Sir Joseph Lister, possessed powerful antiseptic properties, with much less power of producing irritation; and he, therefore, devised a form of antiseptic dressing, which he called "the sero-sublimate gauze," which consisted of gauze charged with a solution of corrosive sublimate in the serum of the blood. This, however, was difficult to manufacture, and produced a harsh and non-absorbent material which was mechanically objectionable. It was succeeded, in his hands, by the combination of chloride of ammonium and bichloride of mercury, known as sal-alembroth, which, while much less irritating, was so exceedingly soluble in the blood serum that whenever the discharges from wounds were copious it was washed out of the dressings, leaving them without antiseptic property. For these reasons Lister in time discarded this material and employed for a considerable period a gauze containing three or four per cent., by weight, of the biniodide of mercury. This was less soluble, non-volatile, powerfully antiseptic, but, again, extremely irritating, so that the least contact with the skin produced an intense erythema, even going on to vesication.

Lister was thus led to look further for the ideal antiseptic, and he has now found it, he believes, in the preparation which I here show you, which is a double cyanide of zinc and mercury. In the last number of *The British Medical Journal* (November 9, 1889), which has just reached this country, the various facts to which I have merely alluded, are set forth at length by Lister, and his paper, besides being an important scientific contribution, supplies interesting evidence of the remarkable patience, perseverance, and attention to detail which have invariably characterized the work of this great surgeon.

I am enabled to show you the material itself, the double cyanide, and the specimens of gauze which you see here impregnated with it and ready for use, through the kindness of Sir Joseph Lister himself, who was good enough during my visit to London, last summer, to give me confidentially the various formulæ which he was using, and to supply me with the materials from his own manufacturers of gauze and of chemicals. He did this, as I have said, *confidentially*, on account of the fact that, while he was experimenting with other dressings, notably the sal-alembroth, the announcement had been made by others that he was using them, and they were extensively employed, at a time when he was quite unprepared for publication upon the subject. I have, therefore, been unable, either in teaching or writing, to make use of my acquaintance with this method until to-day, although I have been employing the cyanide gauze in my private practice; but I now intend to introduce it systematically into my hospital work, believing from my observations in the wards of King's College Hospital last summer, from the evidence furnished by Lister's work, and from my own experience, that it is the best antiseptic yet discovered. Its most evident advantages may be briefly enumerated:

In the first place, it is non-volatile; next, it is almost entirely unirritating; thirdly, it is insoluble in water, and only soluble in 3000 parts of blood serum; and, finally, while it possesses but little germicidal value, its inhibitory power is so high that a solution of 1:1200 is sufficient to keep animal fluids permanently free from putrefaction. This combination of qualities, as you will now readily understand, is possessed by none other of the antiseptics which have been mentioned; and its deficiency in germicidal power is easily remedied by including in the manufacture of the gauze dressings which are impregnated with this material a small percentage (1 in 4000) of sublimate—enough to be germicidal, but too weak to be markedly irritating.

The gauze which I now show you comes in pieces of

six yards each, and, according to the method explained to me by Lister, should be prepared as follows—the proportions which I give being those required for the impregnation of twenty pieces of gauze, each of that length: A mixture of the zinc and mercury salt and of water is made in the proportion of 800 grains of the former to 28 pints of the latter. The gauze is drawn through this mixture slowly, the apparatus used by Lister consisting of a wooden trough in the shape of an inverted pyramid, with a bar a short distance from the bottom, under which the gauze must pass, in that way securing its complete submergence. As it is drawn through it is pressed slightly against the edge of the trough, so as to squeeze out the excess of liquid, and is then dipped in a bath composed of starch, 400 grs., boiling water, 3 pints, mixed together, diluted by the addition of 11 pints of cold water, and still further by adding 15 pints of a 1 to 2000 sublimate solution. The reason for this last, or starch bath, is that the double cyanide, if allowed to dry in the gauze without the admixture of starch, will fly out as an impalpable powder whenever the gauze is handled, whereas with the starch it makes a mixture which, while not a chemical compound, seems to be a very intimate association of the cyanide with the starch, the latter holding it in the meshes of the gauze. The bichloride is added, as I have already said, for the sake of its germicidal action. The gauze, when taken out of this bath, is laid for a few moments between the folds of a perfectly clean sheet, which absorbs the excessive moisture, and is then folded and ready for immediate use. Or it may be dried and used after moistening with the 1 : 4000 sublimate solution.

Another method, which is recommended by Lister in the above-mentioned paper, will probably prove still more simple. A strong solution of starch is mixed with the double cyanide powder, and after this a quantity of the sulphate of potash, which is an inert powder, and is used in this connection just as it is in Dover's powder, for the sake of the mechanical effect produced by its gritty particles.

Take, for example—if it is desired to impregnate twenty pieces of gauze, each six yards in length—eight hundred grains of the double cyanide. Stir it into a strong solution of starch, made with warm water until it is almost pasty in consistence. Add two or three tablespoonfuls of sulphate of potash; allow the mixture to dry; powder and diffuse it in several gallons of a 1 : 4000 solution of bichloride, enough being employed to permit of the thorough immersion of all the gauze.

The excess of sulphate of potash is practically gotten rid of in this watery solution, but if it were not it would do no harm, as it is, as I said, inert. The gauze should then be carefully drawn through this mixture, which is stirred up; the material is deposited in the meshes, and should be dried between a folded sheet, if it is needed for immediate use, or over a line in a clean room free from dust. If the latter plan is adopted, it should be moistened again with 1 : 4000 bichloride just before using.

The dressing of a wound, then, according to the present Listerian method, would consist in the application immediately over the line of the wound of from six to eight layers of this gauze, out of which the bichloride has been washed by wringing it out once or twice in a solution of 1 to 20 carbolic acid. This leaves the gauze impregnated merely with the absolutely unirritating double cyanide, the carbolic acid soon disappearing by reason of its volatility. Above this are placed successive layers of the moist gauze, and outside of this, if it is necessary to use still other dressing for purposes of pressure or otherwise, the ordinary absorbent bichloride cotton may be employed.

We have then a dressing which would seem to combine all the essentials of a perfect antiseptic, and it is to be hoped that the results obtained from the use of this material will be those which, on *a priori* grounds, we have a right to anticipate. My own results thus far have been most encouraging, but I have not yet had time to use the dressing in a sufficiently large number of cases to make publication desirable.

As an illustration at once of the intense interest and of the scrupulous care which Sir Joseph Lister brings to all his antiseptic work, I feel sure that I may without impropriety mention the fact that all the gauze which he has thus been employing for more than a year past has been made by himself and Lady Lister, in the evenings, in his office; this both for the sake of avoiding premature publication of his methods, and for the purpose of obtaining an absolutely reliable and unvarying article.

I value very highly the opportunity which he has so kindly given me to use this material (of which I have not, until now, publicly availed myself since my return in the autumn), and the permission which he also gave to make its merits known and to impart a knowledge of them to you when he had himself reached a point at which, in his judgment, its introduction to the profession at large was warranted. I shall publish a record of my own experiences with the dressing later in the winter.

MEDICAL PROGRESS.

Deodorizing Injection in Uterine Cancer.—In *L'Union Médicale*, Dr. Cheron recommends the following injection as efficient in destroying the fetid odor of uterine cancers:

℞.—Acid. salicylic.	. . . .	gr. ij.
Sodium salicylate	. . . .	gr. xl.
Tinct. eucalyp.	. . . .	f℥jss.
Vinegar	. . . . .	f℥jss.—M.

This is to be added to one or two pints of water and used as a douche every few hours.

Iodoform in Endometritis.—Jacobs uses the following emulsion in the treatment of endometritis:

℞.—Iodoform	. . . . .	℥v.
Glycerin.	. . . . .	℥vj.
Aquæ	. . . . .	f℥jss.
Tragacanth	. . . . .	gr. jss.—M.

From one-half to one drachm of this is injected into the cavity of the wound two or three times a week.—*Therapeutische Monatshefte*, October, 1889.

Wash for Post-nasal Catarrh.—

Powdered chloride of ammonium	.	1 ounce.
Common salt	. . . . .	2 ounces.

A teaspoonful of this in a tumbler of hot water is to be snuffed up the nose twice a day, particularly in those cases where there is deafness.—*L'Union Médicale*, October 29, 1889.

The Salicylate of Mercury in Syphilis.—DR. HAHN, of Bonn, claims excellent results in the treatment of syphilis with the hypodermatic injections of the salicylate of mercury. He uses it suspended in paraffine oil, according to the following formula of Weisser:

℞.—Hydrarg. salicyl. . . . gr. xxij.
Paraffine oil . . . . fʒiijss.—M.

As the salt is deposited, the bottle containing the mixture must be thoroughly shaken before using. The needle should be kept in paraffine oil, and carefully cleaned before and after the injection. On beginning this treatment he injected two minims of the mixture every eighth day; but as this seemed too large an amount, he reduced it to one minim every fourth day. The injections were made deeply into the glutei. Thirty-eight patients were treated, and Dr. Hahn's conclusions are that (1) all manifestations of the disease are favorably modified, and that in the earlier stages one or two injections cause improvement; (2) it is more efficient than injections of calomel in oil; (3) it produces no local irritation nor symptoms of mercurial poisoning, if not used in larger amounts than indicated above. As yet no observations are forthcoming on the influence of the drug in preventing relapses.—*Therapeutische Monatshefte*, October, 1889.

Prescriptions for the Administration of Chloralamid.—In the *Therapeutische Monatshefte* for October, 1889, DR. A. LANGGARD gives the following formula:

℞.—Chloralamid . . . . gr. xl.
Acid. mur. dil. . . . . ♏ v.
Syrup. simplex. . . . . fʒijss.
Aq. dest. . . . . fʒij.—M.

This may be taken at one dose.

Used as an enema:

℞.—Chloralamid . . . . gr. xl.
Acid. mur. dil. . . . . ♏ij.
Alcohol. . . . . ♏xv.
Aq. dest. . . . . fʒiijss.—M.

Treatment of Influenza.—HENRI HUCHARD, in the treatment of influenza, recommends quinine sulphate and aconite to allay the periodic and febrile elements so frequent in the disease, and the extract of cinchona to combat the adynamic symptoms. He prescribes them in the following formula:

℞.—Quin. sulph. }
Extr. cinchonæ } . . . āā gr. xxx.
Extr. aconiti . . . . gr. jss.—M.

Ft. pil. 20. Three of these should be given daily.

When neuralgia is a prominent symptom hydrobromate of quinine and aconite are useful. When the febrile and neuralgic forms are united, it is often better to resort to antipyrin, in doses of thirty to forty grains daily. When gastro-intestinal catarrh is a complication, an aperient is required, and an emetic employed at the outset often gives relief. In consideration of the adynamic tendency of the disease, ipecac is the best emetic. When bronchitis predominates the following is a useful formula:

℞.—Pulv. ipecac. et opii }
Pulv. scillæ } . . āā gr. xxx.
Quin. sulph. } —M.

Ft. pulv. 20. Four or five to be taken daily.

Adynamia should be treated by alcoholic drinks and cinchona. If the adynamic symptoms are marked, give hypodermatic injections of caffeine. Tannin is sometimes of use in diminishing the secretion of mucus, and controlling headache, neuralgia and myalgia, and cerebral excitement. It does not cause digestive disturbance, as it is accused of doing, but often increases the appetite. Tannin should be given in doses of five to ten grains three times daily. With children, who usually will not swallow it, it should be given as an enema. Powdered benzoin is useful combined with tannin, after this formula:

℞.—Tannic acid . . . . gr. xxxvj.
Powdered benzoin . . . gr. vijss.—M.

In 5 powders.

Or quinine may be combined with tannin thus:

℞.—Tannic acid . . . . gr. xxxvj.
Hydrobromate of quinine . gr. xv.—M.

In 5 powders.

Although gastric symptoms are not usually a contra-indication to the use of tannin in influenza, there are some cases where frequent vomiting, intense epigastric pains, and fever require other treatment. Effervescing water, iced milk with Vichy water, salicylate of bismuth, sinapisms, will all be sometimes found useful.—*Revue Générale de Clinique et de Thérapeutique*, October 17, 1889.

Tincture of Euphrasia in Acute Coryza.—DR. G. M. GARLAND, in the *Boston Medical and Surgical Journal*, Nov. 7, 1889, strongly recommends the tincture of euphrasia in the treatment of ordinary colds. He finds that if given in the early stages the coryza is usually aborted, but that in advanced stages its effects are much less marked. The dose for an adult is ten drops every two or three hours. In infants and children the drug should be given in smaller doses well diluted; and as the taste is pleasant, its administration is not difficult.

Non-tubercular and Non-cardiac Hæmoptysis.—In the past fifteen years SIR ANDREW CLARK has seen many cases of hæmoptysis in elderly persons, due neither to tubercular disease of the lungs nor to cardiac disease, as demonstrated in a few cases by the autopsy. His observations on this hitherto undescribed symptom lead him to the following conclusions:

1. That there occurs in elderly persons who are free from ordinary diseases of the heart and lungs a form of hæmoptysis arising from minute structural alterations in the terminal bloodvessels of the lung.

2. That these vascular alterations occur in persons of the arthritic diathesis, resemble the vascular alterations found in osteo-arthritic articulations, and are themselves of a rheumatic nature.

3. That although sometimes leading to a fatal issue, this variety of hæmoptysis usually subsides without the supervention of any coarse anatomical lesion of the heart or of the lungs.

4. That the hemorrhage is aggravated or maintained by the administration of large doses of astringents, by the application of ice-bags to the chest, and by the unrestricted indulgence in liquids to allay the thirst which the astringents create.

5. That the treatment which appears at present to be the most successful, consists in restricted diet and quiet, in the moderate use of liquids, and the quieting of cough; in calomel and salines; in the use of alkalies with iodide of potassium; and in frequently renewed counter-irritation.—*British Medical Journal*, October 26, 1889.

Trephining for Epilepsy.—An interesting and instructive case of traumatic epilepsy cured by trephining is reported in the *British Medical Journal* of October 26, 1889, by Drs. Williamson and Jones. The patient was a young man who had received a lacerated wound on the left Rolandic area, two years previously. He was insensible for a short time after the injury. A week later the wound was complicated by erysipelas, and about the same time he had his first epileptiform seizure. Sixteen fits occurred the same day. He remained unconscious for a few days, and his right leg and arm were paralyzed for three weeks. He spoke slowly, and at first incoherently, but this defect passed off in a week. The paralysis of the limbs finally disappeared, commencing in the leg. The wound in the head soon healed, but had on more than one occasion discharged a little pus. The last occasion was in February, 1888. When he first came under observation there was a small triangular depression over the Rolandic area on the left side, marking the position of the old injury. On November 3d he went to bed at 1.30, and was seized with convulsions, which constantly recurred, and from which the patient did not recover consciousness until after the operation. The fits were short in duration, but recurred every ten minutes. They began with groaning and slight movements of right limbs; then tremors of right limbs; then tetanic rigidity of right limbs, accompanied by jerking of the head round to the right side, the mouth being also drawn to the right. So soon as the rigidity of the limbs and jerking of the head subsided, the right eye commenced to blink violently. In the afternoon the blinking was followed by rapid nystagmus; but in the evening, before the operation, no nystagmus was noticed. The head around the scar was shaved and washed with terebinth, and a subcutaneous injection of morphine and ether administered. A semicircular incision was made down to the periosteum over the scar, the convexity of the curve being upward. A flap of periosteum was then deflected, and the whole mass reflected, exposing the old depression. A three-quarters inch trephine was then used below the site of the cicatrix. The circle removed had attached to its internal surface a triangular piece of bone penetrating into the brain at right angles to the cranium to a depth of three-quarters of an inch. The trephine was introduced at the junction of the middle with the lower third of the Rolandic fissure, the largest diameter being opposite the ascending frontal convolution. The measurements were conducted after the method of Thane and Hare. A probe with a bent point was then placed into the trephine space and a little anterior to it; the inner plate felt bare. In consequence, another trephine hole was made a quarter of an inch anterior to the first, and the intervening bridge of bone removed by saw and forceps. This procedure yielded a small piece of necrosed bone. The wound was treated during operation with perchloride of mercury; all bleeding vessels were tied, the cut surfaces dusted with equal parts of iodoform and boric acid, a catgut drain introduced, and the whole covered with antiseptic wool dressings. Owing to the adherent condition of the dura mater to the skull, it was thought more prudent not to attempt any bone-grafts. During the operation, previous to the removal of the first button of bone, the patient had two fits. After its removal there were no more fits, their place being taken by attacks of restlessness. For the following five months there were no spasms, though a small sinus remained at the wound, which discharged slightly. At the end of about five months the fits returned with their former severity, and, on reopening the wound, a small spicule of necrosed bone was found and removed. Since then there has been no return of the fits.

Chloralamid.—Additional evidence of the value of this new hypnotic is furnished by Dr. D. R. Patterson, in the *Lancet* of October 26, 1889, who has used the drug in fourteen cases of sleeplessness from various causes. The usual dose was fifteen to forty-five grains dissolved in water, a few drops of alcohol materially aiding the solubility.

In a case of simple insomnia in an old woman, thirty grains produced twice, a long refreshing sleep. The third night fifteen grains were administered, which were also followed by eight hours of sleep.

Its influence on the insomnia associated with phthisis is quite satisfactory. A night's rest of from six to seven hours frequently resulted from doses varying from fifteen to forty grains. In a girl of eighteen, who had slept but indifferently, thirty grains induced, after thirty-five minutes, nine hours of unbroken sleep, from which she awoke with a clear head. In two out of the three cases of phthisis in which it was tried, there was present, besides moderate insomnia, copious night-sweating. The effect in checking this most troublesome and exhausting symptom was marked in both cases. Thus, in a man of forty years of age, who had profuse night-sweats and indifferent sleep, thirty grains shortly after his admission gave him the first dry night he had had for some time, besides affording him sleep. On the following evening the drug was omitted. He slept very lightly, and was quite wet in the morning. The administration of forty grains of chloralamid the evening after gave him an unbroken sleep of nine hours, and he awoke perfectly dry.

The results obtained in two cases of heart disease were encouraging, and would compare favorably with those of any other hypnotic. Doses of thirty grains in a man suffering from aneurism of the aorta gave fair rest, easing the pain and relieving the cough. There were no disagreeable accompanying effects, the patient bearing the drug well. In a case of emphysema and dilated right heart with orthopnœa, thirty grains had little or no influence; forty-five grains induced slight wandering and a feeling of intoxication, which did not, however, last long.

The restlessness and delirium of enteric fever were treated by the drug in two cases. In a strongly built man who had been ill for some time, doses of thirty grains and forty-five grains produced feelings of sickness and dryness of the mouth on awakening. The amount of sleep obtained, however, was very satisfactory. In a case in an early stage smaller amounts (fifteen to thirty grains) materially quieted the delirium and procured a tranquil night. In neither of these two cases was there any influence on the pulse.

In a case of Bright's disease, in which the sleep was seriously disturbed by almost constant headache, for which several remedies had been tried, forty-five grains led, after the space of thirty minutes, to a sleep of eight and a half hours.

Notwithstanding these results, Dr. Patterson doubts if chloralamid will replace chloral, though the freedom from injurious effects gives it a strong claim upon our attention.

The Mixed Method of Anæsthesia.—DR. AUBERT, of Lyons, is a strong advocate of the so-called mixed anæsthesia, and about thirty minutes before operating injects 15 drops of the following solution:

Muriate of morphine . . .	four grains.
Sulphate of atropine . . .	one-half grain.
Distilled water	one ounce.

According to Dr. Aubert, the advantages of this method are:

1. Safety of patient.
2. The great rapidity with which unconsciousness is obtained.
3. The absolute calm of the patient.
4. The facility of awakening.
5. The avoidance of complications or the sequela, malaise and vomiting. Professors Gayet and Leon Tupin have both employed this method of anæsthesia. Dr. Gayet recommends it particularly in ocular surgery, for the great calm that is obtained with it.—*Gazette Médicale*, October 9, 1889.

The Digestibility of Boiled Milk.—Though the importance of sterilizing milk for bottle-fed infants in cities has been proven beyond a doubt, the process seems to have some disadvantages. In a recent number of the *Zeitschrift für physiologische Chemie*, DR. RANDNITZ publishes some striking experiments on the subject. He shows by analysis of the milk ingested, and of the feces and urine, that much less nitrogenous material is abstracted from boiled than from unboiled milk. If 15.6 grammes of nitrogen in the form of unboiled milk were given to dogs for three days, analysis showed that 9.4 per cent. was stored in the tissues of the animal. On the other hand, with the same amount of nitrogen in boiled milk, but 5.7 per cent. was assimilated. If these results are confirmed it is evident that an infant must need a larger quantity of sterilized than of raw milk.—*British Medical Journal*, October 19, 1889.

Treatment of Phlegmasia Alba Dolens.—In *L'Union Médicale* of October 19, 1889, the following routine treatment of this troublesome state is given: The patient must be placed absolutely on the back; the diseased limb being treated by forcible extension, and the application of a liniment made up of olive oil, morphine, and chloroform. After this has been applied, the leg should be wrapped up in cotton batting and kept at a uniform temperature, and frequent movement and examination of the parts are to be avoided. To combat the pain, chloral and other narcotics are to be used internally, and hypodermatic injections of morphine and laxatives are to be given. After the pain diminishes, alkaline diuretics are to be used to favor the absorption of the œdema, and, if necessary, the skin may be punctured to relieve the swelling. The patient should be confined to bed for thirty days until all evidences of trouble have ceased and the œdema entirely passed away.

The Effects of Naphthalin on the Eyes.—KOLINSKI (*Vratch.*, No. 22, 1889), after a series of experiments upon rabbits, dogs, guinea-pigs, and mice, concludes that:

1. Naphthalin produces diseases not only in the eyes but also in the internal organs.
2. The principal pathological condition caused in the eyes is hemorrhage and its secondary effects.
3. The hemorrhage is usually in the choroid, and causes separation of the retina and disease of the vitreous body.
4. Opacity of the lens, caused by toxic doses of naphthalin is secondary to disease of the vascular membrane of the retina.
5. Naphthalin cataract develops in the same manner as do other soft cataracts.
6. After very large doses, the development of the cataract and the swelling of the lens are extremely rapid.
7. The appearance of an irregular astigmatism at the beginning of a cataract, is explained by an excess of liquor of Morgagni between the lens and its capsule.
8. The crystals that are found in the eye, after toxic doses of naphthalin, are composed of acid phosphate of lime and are deposited in the tissues deprived of their vascularity.
9. These crystals only form in chronic naphthalin poisoning.
10. The opacity of the crystalline continues to develop, even if the administration of naphthalin is stopped; and although the cataract is reabsorbed in time, the crystalline never becomes quite transparent.
11. The changes in the vitreous, retina, and vascular membrane never quite disappear.—*Bulletin Général de Thérapeutique*, October 15, 1889.

Methyl Chloride as a Local Anæsthetic.—DR. ERNST FEIBES, in a recent number of the *Berliner klinische Wochenschrift*, draws attention to the extensive and successful use in the Paris hospitals of methyl chloride as a local anæsthetic. Methyl chloride (CH_3Cl) is a colorless, easily liquefied gas, with an odor resembling that of ether and chloroform. The readiness with which the gas liquefies adapts it for convenient use, as it can be stored in a siphon, or in a bottle composed of non-conducting material. It may be applied to the skin directly from the siphon, or as a spray, but this method is objectionable, owing to the anæsthetized area not being in most cases sufficiently circumscribed. A better method is to saturate a cotton tampon, the size of the area which it is desired to anæsthetize, and apply by means of a wooden holder. After a few moments' contact the skin becomes pale, anæmic, and greatly diminished in sensitiveness. If the tampon is then removed reaction quickly follows, the part becoming congested; but if the application is continued a few seconds longer the skin assumes a white, dried, parchment-like appearance, which is the proper time for operation. Care must be taken not to continue the contact too long, else superficial necrosis may result. The methyl chloride anæsthesia is used not only in minor surgical operations, such as circumcision and opening of abscesses, but in the treatment of neuralgia and muscular rheumatism.—*British Medical Journal*, October 19, 1889.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

Address the Editor: H. A. HARE, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, including Postage.

PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
NOS. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, NOVEMBER 30, 1889.

TRANSMISSION OF SYPHILIS BY CONTAMINATED INSTRUMENTS.

AT the meeting of the Académie de Médecine of Paris on November 5th, an abstract of which appears in the *Gazette Hebdomadaire de Médecine et de Chirurgie*, for November 8th, M. LANCEREAUX reported two cases in which syphilis had been communicated by the employment of contaminated instruments. In the first patient the infection took place through the agency of an Eustachian catheter which had been previously used for syphilitic individuals, and had not been thoroughly cleansed and disinfected; and in the second the instruments of a dentist conveyed the virus to the mouth of a lady undergoing preparation for the application of a set of false teeth.

Unfortunate as they are, these two cases are by no means the first of the kind recorded in medical literature, as everyone familiar with that part of it pertaining to syphilis well knows. The Eustachian catheter enjoys a most unenviable notoriety amongst the recognized sources of mediate contagion of syphilis, and certain dental procedures, such as transplantation of teeth, etc., have been held to answer for the mischief on more than one occasion.

Recognizing as fertile sources of syphilitic contagion the mouth, the throat, and the nasal cavities —each and all of them so commonly presenting contagious lesions of the disease—it is incumbent upon all who deal with the affections of these parts, and upon dentists as well, that they should appreciate the risk they run of inoculating their healthy patients by instruments employed in the treatment of syphilitics, and should take the most minute precautions to avert such calamities. Of what are these precautions to consist? One, which is obvious, is that an instrument used for treating or making applications to a syphilitic should never again be used upon anyone else except another syphilitic; this, of course, is a certain safeguard, but may not, unfortunately, be invariably applicable. Another consists in thoroughly cleansing, and sterilizing by means of antiseptic solutions, each instrument every time it is used, with just the same care and precision which surgeons exercise with their instruments. M. Lancereaux demands that dentists should be compelled to employ "only instruments rigorously clean, and as it would be impossible for them to have special instruments for each of their patients, one should see that there are at the establishment of every dentist disinfectant solutions, and, above all, that they make use of them." This stringent rule is also, he says, to be applied to hairdressers.

A question not inaptly suggested by M. Magitot, in discussing M. Lancereaux's remarks, is whether it would be safe to trust in non-professional hands considerable quantities of antiseptics, notably the most trustworthy one, bichloride of mercury. We can see no reason why dentists should not be as capable of exercising the care necessary in handling these poisonous substances as physicians, if the instruction they receive in chemistry and materia medica counts for anything at all, and if a clear comprehension of the principles of antiseptic methods is exacted of them before graduation.

A more important consideration than this, is whether or not a dentist should be expected to be able to recognize syphilitic lesions in the mouth when he sees them. To this we unhesitatingly answer that he should. Encounter them he must, for syphilis is a widespread disease, and its lesions in the mouth are among the most frequent, and at times the most intractable of its manifestations. With any reasonable amount of information upon the subject, he would, in the majority of cases, find no difficulty in recognizing these lesions, and would be at once on his guard against contaminating his instruments, or, having used them, would spare no pains to render them harmless before again calling them into service.

As to specialists in diseases of the ear and throat, their general knowledge of medicine, and the frequent opportunities afforded them of seeing and dealing with syphilitic lesions, teach them clearly the dangers surrounding their work. And yet we find that, as stated above, one of their instruments, the Eustachian catheter, has been guilty in a number of instances of carrying the virus from these lesions and inoculating healthy individuals. The necessity of exercising the most scrupulous care to employ only thoroughly cleansed and sterilized instruments in this branch of practice, cannot be too strongly insisted upon, and its observance will contribute to reducing to a minimum the possibility of a repetition of the unfortunate calamities which M. Lancereaux reports.

REVIEWS.

THE PRINCIPLES AND PRACTICE OF SURGERY. By JOHN ASHHURST, JR., M.D. Fifth Edition, pp. 1144. Philadelphia: Lea Brothers & Co., 1889.

THE previous editions of this book are so well and favorably known that we shall, in this review, refer only to some of the chief additions which have been made. The general arrangement of the volume has not been altered, and the number of illustrations has been advantageously increased by the addition of a large number of original cuts.

There is much more space devoted to the antiseptic treatment of wounds than in the previous edition, and the author acknowledges that he has been obliged to change the opinion which he formerly held in regard to the value of antisepsis. This change has been caused by the results of two years' experience with the antiseptic method, in the University, Pennsylvania, and Children's Hospitals. We coincide fully with the author "that when used with judgment, and . . . when diluted with common sense, it (antisepsis) is capable of affording very valuable aid to the surgeon." The antiseptic method employed by Dr. Ashhurst is that now in use in most of the Philadelphia hospitals. The part to be operated on is shaved, scrubbed with turpentine, soapsuds, and a solution of bichloride of mercury, 1 : 2000. The instruments are placed in carbolized water; the sponges in a solution of bichloride of mercury, and catgut ligatures are used. Neither the spray nor irrigation of the wound during operation is employed. When the operation is completed the wound is douched with a bichloride of mercury solution (1 : 2000). Rubber drainage tubes are used, and a dressing of protective and sublimate gauze.

With regard to trephining for epilepsy the author reiterates the opinion, expressed in the previous edition, that the operation is usually unadvisable; and that the results of the brilliant operations performed under the guide of "cerebral localization" have thus far not proved as practically useful as was at first anticipated. This is an opinion with which, we think, most surgeons will agree.

The chapter on Diseases of the Eye has been thoroughly revised by Dr. G. E. de Schweinitz, and presents many valuable features. The same may be said of the chapter on the Ear, revised by Dr. B. A. Randall.

The subject of laryngeal intubation is discussed, and there are presented cuts of Dr. O'Dwyer's instruments for intubation. The author considers intubation valuable as an additional resource in cases of laryngeal or tracheal obstruction; but, if circumstances permit, he prefers to introduce the canula through an incision below the seat of obstruction.

The chapter on Wounds of the Abdomen has been considerably enlarged, and several statistical tables of laparotomy for rupture, and stab and gunshot injury of abdominal viscera, have been added. The statistics of the Pennsylvania Hospital, collected by Dr. W. D. Green, show a mortality of forty-five per cent. in cases of penetrating wound of the abdomen which were treated by the expectant or non-operative plan; while the general statistical tables of laparotomy for punctured, incised, and gunshot wounds of the abdomen show a mortality of fifty per cent.

We entirely agree with the author that some of the deaths after abdominal section are attributable to recklessness on the part of the surgeon in unnecessarily prolonging the operation and in disregarding the dangers of shock from exposure and chilling of the viscera. Dr. Ashhurst considers "that if executed with skill and care, laparotomy, at least in well-selected cases of penetrating wound of the abdomen, is a proper mode of treatment."

Notwithstanding the very large number of operations done during the last few years for the radical cure of hernia, Dr. Ashhurst holds the same opinion expressed in the previous edition, "that the most favorable view to be taken of any operation which has been as yet proposed for the radical cure of hernia, is, that while not necessarily followed by grave consequences, it is not unattended with risk, and by no means certain to effect the object designed."

We feel confident that this last edition of Dr. Ashhurst's *Principles and Practice of Surgery* will be received by the medical profession with favor, and will be found to furnish a condensed, comprehensive, and conservative representation of modern surgery.

CORRESPONDENCE.

CHICAGO.

To the Editor of THE MEDICAL NEWS,

SIR: The signs of the times point to Chicago's increasing importance as a centre of medical learning and influence. First, there are our medical schools. Rush Medical College, the medical department of Lake Forest University, leads, with 500 matriculates; Chicago Medical College, the medical department of Northwestern University, follows with 215 medical and 23 dental students, and a compulsory three years' course. Dr. Josef Zeisler, formerly one of Kaposi's assistants, has been recently elected lecturer on dermatology and syphilis in this institution. At the College of Physicians and Surgeons, 150 students are registered. Late faculty changes in this school are: Dr. Henry P. Newman to the Chair of Obstetrics, vice Dr. C. W. Earle, resigned;

Dr. R. W. Jones, Therapeutics; Dr. C. C. P. Silva, Diseases of Children. About 50 practitioners are enrolled on the lists of the Chicago Polyclinic and the Post-graduate School. As yet the Woman's Medical College has not reported. Then there are about 650 students in attendance upon the homœopathic and eclectic schools. All told, in this city of a million inhabitants, over 1600 individuals are known to be actively engaged in the study of medicine. Students come chiefly from the West, Northwest, and Southwest, very few from the East. Occasionally some of them stray to the Atlantic seaboard. Commonly they are disappointed candidates for graduation, and, be it remarked, the same men usually return happy after a phenomenally brief sojourn. Passing mention ought to be made of the immense amount of surgical material at the disposal of the various clinics—not a remarkable fact, when one recalls the twenty-five important railroads that centre in Chicago. The prestige of Brainard's fame still lingers round our medical halls, and it is proposed at no distant date to erect a fitting monument to the memory of a man, whom Senn[1] has justly characterized as a clear thinker of original power, as a bold and skilful operator, as a successful practitioner, and as a patriotic citizen.

But the event of pregnant significance in the medical history of this city and of the Northwest occurred last September. It consisted in the incorporation of the "Medical Library Association of Chicago." It is proposed to collect $50,000 from the local profession by the establishment of one-hundred-dollar governing and three-hundred-dollar life memberships, with ten dollars annual dues. When this amount is deposited, the directors will appeal to the public, with confident hope of attention and response. Already an amount, over $10,000, is in the bank, and the work has scarcely begun. The office-holders of the directors for the year 1889–90, are Drs. N. S. Davis, Sr., president; Edward M. Lee, vice-president; Ephraim Ingals, treasurer; Bayard Holmes, secretary.

The urgent need of an adequate reference medical library in Chicago is apparent, as, at present, the only important collection of medical literature within the valley of the Mississippi is located at Milwaukee, and this is a private institution. To the credit of its owner, however, it must be said that he has been kind to his less fortunate professional brethren, in allowing them to consult his books.

Chicago is, or will be in the near future, magnificently supplied with libraries, full of books on every subject except medicine and the allied sciences. The "Newberry Library," on the North Side, has a fund of nearly $3,000,000, but it is designed as a reference library, without respect to medicine. The trustees of this fund admit the pressing want of a medical library and faithfully promise to consider carefully the formal petition of the profession, twenty-five to fifty years from date. In this collection "Americana" will be fully represented, also "Theologica," but there is no place for books on animal structure and function! The "John Crerar Library," with funds amounting to $2,500,000, to be located on the South Side, must contribute such a collection of literature as will fulfil the following conditions: "I desire," writes the testator, "that books and periodicals be selected with a view to create and sustain a healthy moral and Christian sentiment in the community, and that all nastiness and immorality be excluded. I do not mean by this that there shall not be anything but hymn books and sermons, but I mean that dirty French novels and all sceptical trash and works of questionable moral tone shall never be found in the library."

The "Chicago Public Library" has already demonstrated the wish to rid itself of the incubus of a medical department by offering, without conditions, the few medical books now on its shelves, to the new "Medical Library Association of Chicago."

Under these conditions, will any one attempt to deny the wisdom of the plan here outlined? Every legally qualified practitioner, irrespective of therapeutical views, has been invited to join, and the majority have signified their willingness. It is surprising to behold the unity of the profession in this enterprise. Men of opinions diverse and irreconcilable, of bitterest personal antagonisms, work shoulder to shoulder in harmony, all intent upon the common end. Indeed, the "Medical Library Association of Chicago" seems to offer a sufficient solution of the code problem.

But the Chicago public must not be condemned too severely for its apathy and apparent disregard of the higher interest of the medical profession. The doctors are loyal to their city, and they anticipate polite attention and prompt response from the people, when they, themselves, have done their duty. Matthew Arnold said that "Chicago was too beastly prosperous." This is a malicious slander that we repudiate. After all the palaces, temples, monuments, and mausoleums now under way have reached completion, and after the termination of the World's Fair in 1892, Chicago will turn her attention to still higher culture, and when she does, in the language of the west, "she will make things hum." "She will just hump herself and hustle."

The princely generosity of the late John Crerar, whose will was proved on the 14th instant, deserves more than passing mention. Among the bequests the following are of special interest to medical men: Chicago Orphan Asylum, $50,000; Chicago Nursery and Half-Orphans' Asylum, $50,000; Chicago Presbyterian Hospital, $25,000; St. Luke's Free Hospital, $25,000; Chicago Relief and Air Society, $50,000; Illinois Training School for Nurses, $50,000; Old People's Home, $50,000; Chicago Home of the Friendless, $50,000.

The thirteenth annual meeting of the American Academy of Medicine was held at the Leland Hotel on November 13th and 14th. Dr. Leartus Connor presided. He read an excellent paper on "The American Academy of Medicine; its Signs of Promise and Obstacles, its Field of Labor, and some Suggestions looking to an Increase of its Efficiency." Dr. Samuel J. Jones was elected President for the ensuing year.

At the annual meeting of the Chicago Gynecological Society, held October 17, 1889, the following office-bearers were chosen: President, J. H. Etheridge; First Vice-President, Philip Adolphus; Second Vice-President, Franklin H. Martin; Secretary, Edward Warren Sawyer; Treasurer, F. E. Waxham; Editor, J. C. Hoag; Pathologist, Bayard Holmes. Dr. Charles T. Parkes, the retiring President, in his address, referred to the treatment of spina bifida, and reported three cases recently ob-

[1] Introductory Address, Rush Medical College, September, 1889.

served. The first example of the condition occurred in a small, marasmic, bottle-fed baby, four weeks old. The tumor was situated in the lower lumbar region, three inches in diameter, pedicle one and a half inches wide. When the fluid had been reduced, a longitudinal incision was made through the covering of the tumor, layer after layer being taken up, at the same time carefully dissecting off and dropping into the spinal canal a ridge made up of terminal nerves. Union of the cut surface by *étage* suture of three strata. Strict antisepsis. Cure within ten days, although followed by slight partial paralysis for two weeks. The second case was an example of myelomeningocele in the upper lumbar region of a boy, seven weeks old. The tumor was pedunculated, four inches in diameter, with an ulcerated surface. Same operation as in the first case, but fewer nerve-elements were found in the walls of the sac. The patient was cured. In the third case a weak, delicate baby, of four months, presented an ulcerated meningocele in the mid-dorsal region. The laminæ of two vertebræ were defective, and upon reduction of the fluid the opening into the spinal canal could be felt. The same operation was performed as in the first two cases, with the exception of the final suture. In this case, one suture was passed close to the base of the tumor through the skin. In the other case the skin was avoided. The child did well until the seventh day, when septicæmic symptoms appeared, and the child died soon afterward of septic meningitis. Dr. Parkes thought the source of infection was the stitch passed through the skin.

The Society then adjourned to a banquet at the Grand Pacific Hotel, tendered by the retiring president, Dr. Parkes.

Diphtheria of a malignant type is uncommonly prevalent, the number of deaths from it for the week ending October 26, numbering twenty-four; the week following showing a considerable increase. The disease does not appear to be epidemic, but seems to be due to local causes, defective sewerage in particular. Chicago's other scourge, typhoid fever, is always present. The Health Commissioner has no return of the total number of cases of this disease, but the death-rate is high. The occurrence of typhoid fever in Chicago is not at all remarkable when one reflects upon the water supply. The sewerage of the city passes directly into the lake, and within a few hours a portion, in the form of drinking-water, is pumped back again from the "crib," about two miles out. In the dim and distant future, we hope to have a "crib" four miles out in the lake, and expect to turn the sewerage of the city into the Mississippi.

DETROIT.

To the Editor of THE MEDICAL NEWS,

SIR: For many years Detroit has been regarded as a medical centre, having one or more medical schools as well as being the seat of publication of several medical journals. The natural advantages possessed by this city, together with business enterprises and the fact of being upon the highway of commerce and travel between the east and west, have rapidly increased the population until now it numbers a quarter of a million. With this growth has also been a demand for hospitals, and now there exist several thoroughly equipped institutions, all enjoying a large patronage.

St. Mary's Hospital, on St. Antoine St., is a large brick structure under the supervision of the Sisters of Charity. Here the students of the Detroit College of Medicine receive the greater part of their clinical instruction, the attending staff of the hospital being connected with the College.

In connection with St. Mary's Hospital is the dispensary where the out-door patients are treated daily and furnish material for a complete out-door clinic.

It is the purpose of the Sisters to add another wing to the hospital which shall contain fifty more beds, and also a fine, large, thoroughly-equipped operating amphitheatre.

Clinical instruction is also given at Harper Hospital, situated at the head of Martin Place, in the northeastern portion of the city. This building accommodates the Children's Free Hospital—an institution comparatively recently organized but doing much good work and fulfilling a long-felt want.

The Farrand Training School for Nurses is a prominent feature in connection with Harper Hospital and is very successful.

A subject of much interest to the medical profession, viz., the hot-air treatment in phthisis—is being thoroughly tried by Dr. Shurly in a ward of Harper Hospital set apart and thoroughly equipped for that purpose. The publication of his results will be of great interest.

In addition to the ambulance at the hospital, Harper Hospital has established an ambulance station in the centre of the town, on St. Antoine St.

Two blocks north of Harper Hospital, on the same street, is Grace Hospital, endowed and built within a year by Senator McMillan, Mr. A. Chaffee, and the late Mr. J. S. Newberry. It is a handsome building of stone and brick. This institution is under the guidance of a homœopathic staff, has a training school for nurses, an ambulance, and an out-door free dispensary.

The homœopathic fraternity is well represented here as regards numbers, and have a medical society which meets about once a month. Of late its most important business seems to have been dealing with dissensions occurring in the attending staff of Grace Hospital, which, so far, they have been unable to settle with peace and harmony.

St. Luke's Hospital is a handsome brick structure surrounded by extensive lawns and driveways, located on Fort St. West, in the western part of the city, near Fort Wayne.

The Emergency Hospital and Michigan College of Medicine occupy a brick structure on Porter St., near Michigan Avenue, in a central portion of the city.

The United States Marine Hospital, under the supervision of Surgeon Stower, is a large brick edifice surrounded by beautiful grounds, on the corner of Jefferson Avenue and Mt. Elliott, in the eastern part of the city. An out-door dispensary at the down-town office on Griswold street affords relief to many cases.

With the beginning of the present collegiate year the trustees of the Detroit College of Medicine turned over to its faculty the handsome stone and brick building just completed for college purposes, situated near their former college building on St. Antoine Street. This is a building which should fill with pride the bosoms of any medical faculty, being a handsome brick structure with stone trimmings and facings, and fitted within with due regards

for the necessities of a thoroughly equipped medical college. The entrance is an imposing and graceful archway of dressed and carved stone and leads into a splendid and spacious hallway finished in antique oak. Without more minute description I may briefly say the museum, laboratories, lecture room, dissecting room, etc., are all models of their kind. Ventilation and the disposition of waste materials from dissecting room have been carefully provided for by the adoption of the Smead System.

There are four regular medical Societies—the largest being the Detroit Medical and Library Association, whose thirteenth annual meeting was reported in these columns a few weeks ago. This society, which formerly met twice a month, since its last annual meeting meets once a week. Contrary to the expectations of some of the members, the amount of work disposed of at the meetings, if anything, exceeds that of the former arrangement.

The Wayne County Medical Society and the Detroit Academy of Medicine are flourishing societies—the former holding meetings twice a month and the latter once a week.

The Detroit Gynecological Society devotes itself to that specialty.

Among the medical journals owned or published here are *The Index Medicus*, *The American Lancet*, *The Therapeutic Gazette*, *The Pharmaceutical Era*, and *The Medical Age*.

ST. LOUIS.

(*From our Special Correspondent.*)

To the Editor of THE MEDICAL NEWS,

SIR: Medical journalism in St. Louis has undergone a number of changes during the past year. The *Courier of Medicine*, which for ten years held a leading place, not only among the medical journals of St. Louis, but of the entire West, was discontinued at the close of the year. This was a special loss to the members of the Medico-Chirurgical Society, because by an arrangement between that society and the association which founded the *Courier* all the exchanges of the journal and all books received for review were deposited in the society library for the joint use of the members of both organizations, and in the course of ten years quite a useful collection of periodicals and books had accumulated and was becoming each year more valuable. Now, of course, the only additions to the library are those secured by special donation from the members and those which are purchased from the funds of the society. About a dozen of the leading home and foreign journals are now regularly kept on file in the society hall for the use of its members, among them, of course, THE MEDICAL NEWS.

Returning to the subject of medical journalism in St. Louis, I may mention that the faculty of the "Post-graduate School of Medicine" have started a monthly medical journal, *The St. Louis Polyclinic*, of some thirty-six pages, designed especially to keep the interests of the school before the attention of the profession in the West.

A medical quarterly has also been started by an enterprising business firm and edited by a physician in the northern part of the State. The journal is called *The Medical Advance*. Though I have seen but one number, I do not think that as a quarterly it has any prospect of success.

Besides these ventures there is a promise of another at the opening of the new year. It is to be called *The Medical Mirror*, and will be edited and published by Dr. I. N. Love, who, until the present year, has been for several years connected with the editorial staff of *The Weekly Medical Review*. Dr. Love seems to have unlimited confidence in the financial success of the new enterprise, for he has subscribed $1000 toward the guarantee fund for the World's Fair in 1892, in the name of *The Medical Mirror*.

I am credibly informed that the faculty of the Beaumont Medical College have bought a lot for their new building on the corner of Pine and Jefferson Avenues, and will proceed at once to erect a suitable and handsome structure with the expectation of occupying it at the next session.

At the meeting of the Medico-Chirurgical Society last Tuesday evening, the subject of changing the location of the society hall was discussed.

For several years the Medico-Chirurgical Society has occupied a handsome hall on the second floor of a building owned by the Post-graduate School of Medicine. It is a central location, and the room is readily accessible, quiet and convenient, and the rent, twenty-five dollars per month, is a mere bagatelle. It has been found, however, that some of the members object to having the hall for society meetings, and reading-room in a college building, and it has been thought by some that the meetings would be better attended and hence more profitable, if they were held elsewhere. After due consideration it was voted to make no change in the location at present.

In closing I would mention that the medical profession here is subscribing liberally to the guarantee fund for the World's Fair which it is hoped will be held in St. Louis in 1892.

NEWS ITEMS.

Is Colorado's Climate Changing?—The inhabitants of Denver are asking what is the meaning of the unusual snow-fall and humidity of the past month. The newspapers of that city have expressed the opinion that their climate is about to undergo a change, in consequence of surface changes of "building up" and improving the State. The present moist season has been especially disappointing to Eastern people, who have journeyed to Denver to escape the humidity of our seaboard winters.

From a letter recently received, a few sentences are quoted: "Snow has fallen each night and morning, but the sun conquers by midday, making walking almost impossible. As a usual thing, the inhabitants expect about ten days of inclement weather during winter and spring, and have not looked upon the paving of streets and crossings as at all necessary. But they are now aroused to remedy this condition. The snow-fall is said by some to be already greater than the total for three ordinary winters." The total fall at the Denver station, in October, was 2.11 inches, and is the only October since 1871, when 1.49 inches have been exceeded, with the single exception of that of 1877, when 2.15 inches were registered: there have been but nine cloudless days in the same month, while nineteen were partly cloudy. The mean temperature has been somewhat

above that of the past decade. Fog—a condition hitherto almost unknown in Colorado—occurred during five mornings in October.

Poorhouse at Wilmington, N. C.—The following report in the Bulletin of the State Board of Health of North Carolina, by Dr. F.W. Potter, of Wilmington, N. C., in regard to a local poorhouse, is worthy of note: While the condition of the poorhouse is pretty good, so far as whitewash and neatness externally are concerned, conditions exist which it is hoped will be corrected as soon as brought to the attention of the commissioners. Reference is had especially to the *pen*, which is known as "the stockade." It is a yard about thirty or forty feet square, having on one side a row of *dens* and on another a row of *kennels*. The yard is inclosed by a close fence about twelve feet high, so that those who have their *homes* within its walls have only their whitewashed surfaces and the blue expanse of heaven for their eyes to rest on, except, possibly, the tops of some neighboring pines. In this pen are kept the work-house prisoners, when not at work (in fact, I believe this constitutes the county work-house), and such unfortunate inmates of the poorhouse as are considered of unsound mind. Also, occasionally, for punishment, those who do not obey the mandates of the "keeper." In one of the "dens" above alluded to a poor wretch has been kept for five or six weeks—a young negro woman—who some time since scaled the walls and walked to Goldboro, a distance of eighty-four miles. She is insane without doubt, but there was certainly "method in *her* madness" when she attempted to find more comfortable quarters. No light reaches her except when some timid attendant forces open the door just wide enough to slip in her victuals and immediately closes it. Whether her clothing is ever changed I know not, but infer not. The "*kennels*" are hardly worthy the name, for a humane dog-fancier would doubtless provide more comfortable quarters for his pets. One of them was almost too small to accommodate the frame which was nailed to one side to receive the dirty bag of straw on which a sick man slept, and a dirty excrement bucket which stood by it. The inmates of these places will surely suffer during the cold weather of the coming winter, unless something is done shortly to prevent it, for these places are very open and exposed to the north winds. I will not take any more space in the Bulletin except to protest against the present method of providing for the poor. The contract for taking care of them is put out to the lowest bidder, and it is human nature for a man to make all he can out of a contract.

An Eccentric Physician's Will.—A physician's last will and testament, of an extraordinary character, is about to be contested at Buda-Pesth. It is that of the late Dr. Goldberger, who left a fortune of $250,000 to accumulate until, in the course of years, it shall have reached the sum of $1,000,000,000, when it shall begin to be used as a fund for the abolition of poverty everywhere. The trustees appointed under the will having declined to serve, and claimants for the estate have arisen at Madrid, London, and in this country.

A Head-nurse Dies by an Ether Explosion.—At the private hospital, in New York City, conducted by Dr. W. Tod Helmuth, of the Homœopathic College, a valued nurse lost her life by an explosion of sulphuric ether. She was in the act of pouring ether from one bottle to another, and is supposed to have been too near to a gaslight. Fatal burns were the result of the accident, followed by death, about forty-eight hours later, on the 21st inst.

Death of Dr. Robert G. Cabell.—Dr. Robert Gamble Cabell, a member of a Virginian family notable in the medical annals of that State, died at Richmond, November 17th, aged eighty-one years. He was the father of Surgeon Arthur Cabell of the U. S. Navy. He had himself been a surgeon during the late war, in the Confederate service.

An Anatomical Chair Filled at the University of Aberdeen.—The University of Aberdeen has, after much delay, found a new Professor of Anatomy. Dr. Robert W. Reid, of St. Thomas's Hospital, London, in the place of Dr. Struthers, resigned. Dr. Reid is an old Aberdeen man, and formerly, for a short period, the anatomical demonstrator at his *alma mater*. The *Montreal Medical Journal* speaks of him as a great favorite with the Canadian medical students who have attended upon his instructions at the St. Thomas's School, for they have found him "a kind friend, a sound anatomist, and a good teacher."

Anniversary of the New York Academy of Medicine.—The New York Academy of Medicine observed its forty-third anniversary on the evening of November 21st, in its new building, No. 12 West Thirty-first Street. In opening the meeting, the President, Dr. Loomis, called attention to the need of $20,000 in additional subscriptions to complete the Academy's new building. He said that $150,000 had already been subscribed, that the Academy hoped to add $70,000 to the building fund by the sale of the present building, and that the new building when done would be the best equipped of its kind in the country. The anniversary address was delivered by Dr. William M. Polk, on "The Relation of Medicine to Some of the Questions of the Day."

Diphtheria at Carbondale.—There have been some disquieting reports in the public press regarding the epidemic prevalence of diphtheria at Carbondale, Pa. There is medical evidence to show that the news agencies by which the sensational despatches were sent out were misled, and the number of cases and fatal results increased a hundred per cent. beyond the true status. At a recent date there had been one hundred cases, with forty deaths.

Leprosy in Minnesota.—According to the *Weekly Abstract of Sanitary Reports*, there are at present seven cases of leprosy in Minnesota, none of which has the disease in a very severe form. Two of the lepers have children, all of whom are perfectly healthy.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, DECEMBER 7, 1889. No. 23.

ORIGINAL LECTURES.

OSTEOMYELITIS OF HUMERUS AND OTHER CASES.

A Clinical Lecture
Delivered at the Rush Medical College, Chicago, Ill.

BY CHARLES T. PARKES, M.D.,
PROFESSOR OF SURGERY.

[Reported by A. J. OCHSNER, M.D., Chief of Surgical Clinic.]

THE first patient is a little girl of three years. Six months ago the upper part of the arm became much swollen and the shoulder stiff. She had high fever. In a few weeks this swelling pointed and broke on the posterior surface of the arm about three inches below the shoulder-joint. A probe can be carried along the sinus, which has remained, a distance of two and one-half inches in the direction of the joint. The joint is now movable and apparently free from pain. Although no dead bone can be detected, it nevertheless seems certain, from the history and from the persistence of the sinus, that a portion of the upper extremity of the humerus has been destroyed, probably by osteomyelitis, possibly by tuberculosis.

The treatment advised is incision and removal of the diseased portion of bone. While waiting for the operation, systematic feeding and other hygienic measures are recommended to place the child in as good a general condition as possible.

NOTE.—At the operation at a succeeding clinic it was found that osteomyelitis existed; the surface being so thoroughly covered with granulations that no denuded bone could be felt with the probe, neither could there have been any grating upon moving the joint.

I next bring before you an anæmic, nervous boy, eight years old. Three months ago he had a severe attack of pneumonia, and following this a swelling of the upper portion of the right arm. The attending physician, detecting fluctuation, opened an abscess five inches from the upper end of the arm on its outer aspect. A sinus has persisted at this point. Denuded bone is detected by the probe. The bone is enlarged to one and one-half times its normal size. There is also a marked enlargement opposite the lower epiphysial line. The unusual swelling and hardness at the extremities of the shaft suggest that it will be found that the disease has destroyed the entire diaphysis. It will probably become an immense sequestrum. Diagnosis, osteomyelitis.

The general condition of the boy has improved very slowly since the beginning of convalescence from pneumonia until the last week or two. It was deemed best to postpone an operation for removal of the diseased bone until the patient has more thoroughly recovered from the effects of his pneumonia. Good diet, outdoor exercise, tonics, and iron are recommended, and the patient advised to return in a few weeks.

LATERAL CURVATURE OF SPINE.

The next patient is a boy, aged five years. He has an awkward gait and carries one shoulder and one hip higher than the other. The chest is flattened on the right side. The abdomen very prominent. On reddening the skin over the spinous processes of the vertebræ by friction, lateral curvature of the spine is apparent. The patient's mother is instructed in certain gymnastics to be performed each day by the child, which are calculated to develop the muscles of the back. Upon returning to the clinic further exercises will be taught.

The parents are directed to give the patient good plain food—beef, mutton, milk, butter, and cod-liver oil—and to give him an abundance of sunlight and fresh air. The patient is to report once in two weeks for examination and further instruction.

GANGLION OF EXTERNAL HAMSTRING TENDON.

This case is a man, aged twenty-four years, who some weeks ago struck his knee against the corner of a box. Since that time he has felt pain on the external surface of the leg a little below the knee. At present there is a fluctuating swelling above the insertion of the external hamstring tendon. The diagnosis is, ganglion of the external hamstring tendon. The treatment should be tapping and the application of a plaster dressing with a pad over the location of the ganglion.

NECROSIS OF SACRO-ILIAC JOINT.

This case is a well-nourished, apparently healthy young woman, aged twenty years. For six years she had a swelling in the region of the sacro-iliac joint, which opened and left a sinus in the gluteo-femoral fold three inches below the great trochanter. One year ago she had some trouble in the right hip-joint, but this has entirely subsided. The joint is freely movable without giving rise to pain. The sinus extends in the direction of the sacro-iliac joint; it can be followed, by means of a probe, for a distance of five inches, but no diseased bone can be felt, although it undoubtedly exists.

The patient is so slightly inconvenienced that the radical steps necessary to insure a permanent cure, namely, laying open the sinus, exposing and removing the diseased bone—do not seem warranted. The patient is advised to return in case of further trouble or inconvenience.

WOUNDS OF ULNAR AND MEDIAN NERVES.

The next patient is a Canadian farmer, strong and healthy, and aged forty-two years. A year and a half ago, he fell into a window severely cutting his wrist with the broken glass. Since the wound has healed, the nervous supply of the little, ring, and middle fingers has

been lacking, evidently resulting from section of ulnar and branches of the median nerve. The treatment advised is to cut down upon the ulnar nerve through the scar, to dissect up the severed ends, and unite them by means of catgut sutures. In a number of similar operations performed in this clinic during the past year, very satisfactory results have been attained.

SARCOMA OF LOWER JAW.

The next patient, a man of forty-nine years, noticed one year ago, a tumor involving the alveolar process of the middle and left part of the lower jaw. The tumor is as large as a hen's egg, and implicates the surrounding tissues. The lymphatic glands of the neck are not involved. The bone is considerably enlarged. The diagnosis is sarcoma, and an early removal is advised. It will be necessary to resect the jaw opposite the ramus on the left side and opposite the bicuspid on the right.

NOTE.—The above diagnosis was confirmed, microscopically, after the operation, which took place at the following clinic.

ANAL FISSURE AND HEMORRHOIDS.

This case is a woman, aged twenty-five years, who has, as you see, an anæmic, suffering appearance. For several months she has suffered very severe pain during and after defecation. Local examination shows an anal fissure, and both internal and external hemorrhoids. Dilatation of the sphincter is advised, and removal of hemorrhoids by means of clamp and Paquelin cautery.

NECROSIS OF TIBIA.

The next patient is a man of fifty-five years, who one year ago sustained a compound fracture of the tibia and fibula of the right leg three inches from their lower extremities. After two months of proper treatment by his family physician, he was able to walk on the limb, but soon after it began to swell, and the wounds, which had previously healed, reopened and discharged pus. On exploring the sinuses with the probe, denuded bone is detected. The limb is six inches in diameter a few inches above the seat of fracture, and the skin has a smooth, red, inflamed, œdematous appearance. The patient complains of a burning sensation. The limb is to be placed in an elevated position, and large hot fomentations of saturated solution of boric acid in water are to be applied to the entire surface. At a future clinic the sinuses are to be laid open, and the diseased bone is to be removed. All the granulations surrounding the dead bone and lining the sinuses will then be thoroughly curetted and washed out, and the cavity changed into a perfectly clean aseptic wound. It is much better to do all of this after the present extreme hyperæmia and œdema have been removed by position and fomentations.

EXOSTOSIS OF TIBIA.

This boy of eleven years comes before us with a history of having a few months ago noticed a hard immovable tumor as large as a hickory nut on the inner surface of the tibia, opposite the upper epiphysial line. There is no definite history of traumatism. If there has been any increase in the size of the tumor since it was first noticed, this has been very slow. There is neither pain nor inconvenience, nor noticeable deformity. The diagnosis is epiphysial exostosis. Non-interference is advised, unless other symptoms should occur. The patient being rather badly nourished and somewhat anæmic, good food, fresh air, and plenty of exercise are recommended; also, a tonic.

COXITIS.

The next patient is a very thin, anæmic, cachectic girl, aged five years. Removing the clothing we have the characteristic appearance of a child suffering from rachitis affecting particularly the spine and the chest. There is an extreme lateral curvature of the spine. The ribs are indented laterally and enlarged at their sternal ends, giving the patient a prominent sternum. Her respiration is abdominal. During the last two months she has begun to limp on her left leg, and to complain of some pain in her left knee. Now the leg is held in a flexed condition, and the toes are inverted. She wakes up at night screaming with severe pain. Placing her on her back on the table, and making flexion and extension with the thigh, the pelvis moves with the thigh, showing that there is muscular fixation. Diagnosis, coxitis. The general condition of the patient being so bad, no radical operation can be advised. In all cases of tuberculosis of joints in which a removal of the diseased portion is not advisable, the best treatment is to secure absolute rest. In this case, we will apply a silicate of sodium cast, which is very light, and strong enough to immobilize the joint; we will also advise the use of good food, sunlight, and fresh air.

SUBLUXATION OF HUMERUS.

The next patient is a man who sustained an injury to his shoulder by falling from a tree. The trauma caused a rupture of the attachment of the deltoid muscle and the anterior ligaments of the joint. There is a forward and downward partial dislocation of the head of the humerus. Patient can move his arm by changing the position of the scapula. All the parts seem to have been driven forward about an inch. The treatment advised is passive motion and massage.

RE-DRESSING OF ABDOMINAL SECTION.

Of the next two cases, the first is brought in for redressing and the second for further observation. A week ago, this patient had one cystic and one apparently normal ovary removed for the relief of epilepsy coming on at the time of the menstrual period. Patient returns for the first dressing. She looks well, and has been comfortable, the temperature never reaching 100°. The wound is perfectly united, and the stitches are removed.

SPECIFIC ULCER OF TONGUE.

The next patient came to the clinic six weeks ago, with a large angry malignant ulcer under the tongue and enlarged submaxillary lymphatic glands. There were sharp edges on the teeth on the affected side. No history of syphilis could be elicited. In order to remove the possibility of error in diagnosis, the patient received antisyphilitic treatment and a mouth-wash of saturated solution of boric acid in water, and was directed to have the teeth extracted. Now, the ulcer is almost completely healed, and the glands are no longer enlarged, showing that it was, in fact, a specific ulcer and not epithelioma.

ORIGINAL ARTICLES.

THE ABUSE OF UTERINE TREATMENT THROUGH MISTAKEN DIAGNOSIS.

BY WILLIAM GOODELL, M.D.,
PROFESSOR OF GYNECOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

WHILE the treatment of uterine diseases received a great impulse from the writings of Simpson in England, of Kiwisch and Scanzoni in Germany, and of Huguier and Recamier in France, it is to Bennet that we chiefly owe the common use of local applications and the popularization of the speculum. The former gynecologists wrote about the more strictly surgical diseases of women, which were, and will ever be, relegated to specialists. But Bennet as early as 1843 in French, and 1845 in English, published his work on *Inflammation of the Uterus*, of which the last edition was issued in 1861. In it he contended that inflammation of the cervical canal is the main factor in female diseases; that from it come ulceration, displacement, leucorrhœa, menstrual derangement, and ovarian disorder; and that the inflammation, being limited to the cervical canal, can readily be dislodged by strong caustics. Written with dogmatic zeal, advising a definite treatment to a reachable and a seeable object—a treatment which the humblest yeoman of the profession could carry out—few books of modern times have exerted so great and so widespread an influence. That riddle of the Sphinx—the cause of woman's ill-health—had been read and interpreted! The profession was taken fairly by storm; the effect was as electric as the appeal of Maria Theresa to Hungarian nobles. From Arctic to Antarctic oceans, from the Mississippi to the Volga, countless speculums of varied form leaped from their bags and flashed in sunlight boreal, tropical, and meridional. Cauteries actual or potential, applied to actual or potential uterine sores, became the order, in fact, the ruling passion of the day. In the general enthusiasm it was soon forgotten that every mucous membrane secretes, and that it must of course give evidence of its own secretion, just as every nose contains its mucus. Hence, every examined womb, being found to contain mucus, was, as it were, invalided—that is to say, it was put on the speculum list. Naturally, then, not a womb being found healthy from the speculum standpoint, this much-abused organ was charged with being the cause of almost all the ills that female flesh is heir to, and it was treated—that is to say, maltreated—for every imaginable disorder that could not be referred offhand to some other organ. Bennet, the medical Frankenstein, had evoked a monster which could not be curbed, and for five and thirty years the speculum ran riot.

But in this age of unrestful progress, at every turn of the hour-glass of time, some cherished creed, some accepted dogma, is proved a heresy, and Bennet's cervical theory fared but little better. A wholesome reaction set in. As experience grew, it was found that pelvic inflammations and strictures of the cervical canal came from this treatment. This discovery led to the abandonment of the more heroic caustics. Then, again, it gradually dawned upon truth-seekers that far more than inflammation, passive congestion of the womb and of its annexes, together with resulting structural changes, that uterine displacements and injuries, and that ovarian and tubal lesions played important *rôles* in the female economy. In keeping with this knowledge is the far more rational and beneficial treatment of the present day.

Still, granting that the treatment of actual, visible, and tangible uterine disease leaves little for improvement, the whole truth has not been reached—for truth evolves slowly and does not, like Aaron's rod, bud and blossom in a night. The ball-and-chain of tradition still drags at the heel of this branch of science, and the medical mind, in close touch here with the lay mind, tends to give the reproductive organs undue importance—to attribute, in fact, altogether too much to their influence. By a very large number of practitioners, even by specialists working in other fields of medicine, these organs are too often wrongfully made the scape-goat for headaches and nape-aches, for spine-aches and back-aches, for weakness of vision, for aural disturbances, for sore-throat and weak lungs, for irritable heart, and also for a host of so-called uterine symptoms. Yet these very symptoms may be due wholly to nerve-exhaustion, or malnutrition of nerve-centres, and not to reflex action, or to direct action, from some real or some supposed uterine disorder. I say this advisedly, because I too have thus erred, and because hardly a day passes without my seeing cases of supposed uterine disease which have been so treated for months—even for years—when the whole trouble, or the most of it, lies—not in the reproductive organs, but—in the nerve-ganglia. This abuse of uterine treatment, through a mistaken diagnosis, is, in my opinion, the great medical error of the day.

Once I was asked by a medical friend to see an exceedingly bad and acute case of pruritus vulvæ. Very naturally attributing it to uterine disease, he discovered a small cervical tear, and I was called to decide the question of repairing it. I, too, was, at first, led astray, but the suddenness of the seizure and the lack of consistency in the behavior of the symptoms, put me on my guard, and we soon found out the cause to be an acute attack of jealousy.

To this day a lady rallies me upon a wild-goose chase which I made after a uterine cause for her neurasthenic symptoms. Carefully overhauling her pelvic

organs I discovered nothing but a torn perineum, and attributing to that lesion all her ills, which were legion, I restored it, making at the same time the rash but honest promise of her complete restoration to health. The rent was a bad one and needed repair, but it had existed for years without doing harm, and it had nothing to do with her symptoms, although they were largely uterine in expression, notably a bearing-down feeling. They became, in fact, worse after the operation than before, and it was only after recognizing the nerve element of her disease, that I was enabled to do her any good. Many such mistakes, of attributing too much to the reproductive apparatus, have I seen in the practice of other physicians; but my own blunders in the same direction have made me feel very charitable toward them. Out of many examples let me give a few:

Not many years ago I was asked by one of our best and most conscientious physicians, himself a gynecologist and a medical teacher, to see a very delicate and refined lady. She had passed through most of the trials which beset a clergyman's wife, and had borne two children, the younger one ten years before. Having for many years enjoyed fairly good health, she lately had suffered a great bereavement, and she was now prostrated by nerve-exhaustion. Her symptoms were markedly of a uterine character. These were pain in the back, an irritable bladder, a pelvic bearing-down, an inability to walk, aches in the left groin, menorrhagia and leucorrhœa. These uterine symptoms had led my friend astray, and finding an insignificant cervical tear, he attributed to it all his patient's ill-health, and, against my advice, operated upon it. The wound healed perfectly, excepting in one suture track on one side of the cervix, where a small fistula remained. His patient becoming none the better, but rather the worse, he laid the blame on this fistula, and tried to close it. Not succeeding, he again called me in. Now, this small fistula had no more to do with the lady's general ill-health than the earring holes in her ears, and her disease was clearly a neurosis. Yet I could not bring my friend to my way of thinking—the uterine symptoms were too much for him, and he tinkered away at the fistula until it finally healed up, but the lady became no better. Finally, he adopted my theory of neurosis, put his patient upon an appropriate treatment, cured her, and then had the manliness to thank me for my advice. My friend is now, alas! no more, else I would not have told this story; and I have done so simply to show how hard it is for a bright and progressive mind, even for a gynecologist and a medical teacher at that, to free himself from the bias of tradition.

By breaking down the nervous system, the brain-cramming, the intellectual rivalry, the buckram proprieties, and the unwholesome confinement of our boarding-schools and public schools, breed a host of sickly girls, who swarm in every class of society. Manifold diseases, both functional and structural, date from the recitation room. They are mostly of a uterine complexion, for at that time of life the sexual sphere dominates, and the brunt of the nervous and of the vascular disturbances which form the essence of nerve-exhaustion, falls on the most exacting organs—the reproductive. Hence these suffer from neuralgic pains or from congestion and the lesions coming from prolonged congestion. Yet physicians, misled by the urgency and the number of the so-called uterine symptoms, mistake the effect, or more often the counterfeited effect, for the cause, and give a local treatment when it should be a constitutional one.

So common is it for girls in boarding-schools to suffer either from amenorrhœa or from irregular menstruation, as to create a general impression in the community that in these schools some drug is secretly given in the food in order to lessen the laundry work. In one school of great repute so many girls missed their monthly periods that the family physician of several of them wrote to me, asking whether it were possible, as his patients averred, "that as their clothes were laundried in the building, something was given in their food or their drink to produce the effect, for the purpose of saving the laundress the disagreeable task of washing the napkins." My reply was, that if laundresses were acquainted with a drug that could arrest menstruation, they knew more than the profession; and that his patients had lost their monthly periods, not from secret drugs, but from loss of health due to an unwholesome system of education.

Another physician, the worthy chairman of a school-board in a young city, became awakened to the fact that a great proportion of the girls in the public schools were failing in health from backache, wakefulness, weariness, and disordered menstruation. Full of philanthropic and architectural zeal, and with the uterine idea firmly implanted in his head, he wrote to me, asking whether the long flights of stairs in the school-houses were not to blame for these female ailments. I replied in words to the effect that were a higher culture literal, being perched upon the top of some Eiffel's tower, like Simeon Stylites upon his pillar, and were girls obliged to climb up to it, the muscular effort would no doubt put them out of breath, and repeated intellectual excursions in the same direction might in the end cause—not uterine diseases, but—the heart diseases of athletes and of Alpine climbers. I further contended that stair-climbing *per se* could rarely produce uterine disorders, and that the girls in his school

were suffering—not from uterine disease, but—from the nerve-counterfeits of uterine disease, viz., from the reflexes of a nerve-exhaustion resulting from an unhealthy, and therefore faulty, system of education. My arguments evidently failed to convince this honest gentleman, for the correspondence abruptly ended at this point, and I have a shrewd suspicion that he carried out his architectural plans. Should any of my readers journey westward, and see in some growing city a girls' school-house fashioned like a covered rope-walk or a skating-rink, depend upon it, it will turn out to be the philanthropic but mistaken evolution of my correspondent. The traveller would no doubt find education very effectively taught on the only floor—the ground floor—of this building; but doubtless, also, he would see as many pale faces, and would discover on inquiry no fewer backaches, spine-aches, womb-aches,and menstrual disturbances, than when the recitation rooms were on the third or the fourth floor.

In a parous neurasthenic woman, a leucorrhœa, a slight prolapse of the womb, a small tear of the cervix, or an insignificant rent of the perineum, each plays the part of the will-o'-the-wisp to allure the physician away from the bottom factor. To these trifling lesions —because they are visible, palpable, and ponderable, and because he has, by education and by tradition, a uterine bias—he attributes all his patient's troubles; whereas a greater and a subtler force, the invisible, impalpable, and imponderable nervous system, may be the sole delinquent. She may be a bereaved mother, a grieving widow, or a neglected wife, and all her uterine symptoms, yes, every one of them, may be the outcome of her sorrows, and not of her local lesions.

Often the victim of this misdirected treatment is a young unmarried girl, whose nerves have been upset by some secret grief, perhaps a cross in love, or by ambitious over-study. Misleading symptoms now set in, which I cannot better describe than by a quotation from one of my own articles on the subject (*Lessons in Gynecology*, third edition, p. 523):

"She loses her appetite, lies awake at night, and grows pale and weak. She has cold feet and blue finger-nails, and perhaps complains of infra-mammary and ovarian pains. Headache and backache, spine-ache, and an oppressive sense of exhaustion distress her. Her monthly periods, hitherto without suffering, now begin to annoy her more and more, until they become extremely painful, and at these times dark circles appear under her eyes. Her linen is stained by a leucorrhœa, and bladder troubles soon set in. She is wearied beyond measure by the slightest mental or physical exertion; the short visit of a friend upsets her for the rest of the day; 'a grasshopper is a burden' to her, and she finally becomes very nervous or hysterical. Now, very unfortunately, the idea attached to this group of symptoms is that the womb is at fault. A moral rape is, therefore, committed by a digital or a speculum examination, and two supposed lesions will be found —first, as a matter of course, the natural virginal anteflexion; and, secondly, a slight uterine catarrh. These are at once seized upon as the prime factors, and she is accordingly subjected to a painful, an unnerving, and a humiliating treatment for the false flexion and the sham endometritis. Unimproved, she drags herself from one consulting-room to another, until finally, in despair, she settles down to a sofa in a darkened room, and becomes either the spoiled pet or the vampire of the family."

That this is not an over-wrought picture, every one of my readers will attest. For what physician has not had the original as a patient, and cursed his stars for the possession?

At the present time there are in my private hospital seven ladies who are rapidly recovering from general nerve-exhaustion and from its sham uterine symptoms. They will get well without any local treatment whatever. Yet all were pronounced by their physicians to be cases of uterine disease, and had been so treated for months, and even for years, without benefit. One of them was urged by an excellent authority to submit to the removal of her ovaries; another, to have her slightly torn cervix sewn up; a third, to have a trifling rent in the perineum repaired. Whilst the fourth, a young girl whose nerves have given way from hard study, had a perfectly healthy and a perfectly poised womb, propped up by an anteflexion pessary, treated every other day, for weeks, by an application, and deluged twice a day with gallons of hot water.

Many of us have laughed at the quaint but kind doctor in one of Bulwer's novels, who prescribes a special pellet for each emotion, and calms a passion by its appropriate parvule. But are we, the physicians of the nineteenth century, a century of infinite progress, are we, I say, a whit the wiser? We who seek to cure the nerve-reflexes of grief, of love, of neglect and of jealousy, not by harmless infinitesimals, but by the removal of the ovaries, and by operations upon the cervix and the perineum; or try to salve brain-wounds and heart-pangs by anteflexion pessaries, by uterine applications and by vaginal douches of a temperature of 110°? Can the rankest materialism be pushed further than this?

Fortunately for the reputation of my professional brothers, and fortunately for my own—for I, the heavy Mentor of this homily, have also sinned and in like manner—this grave error of diagnosis is not without excuse. The symptoms of nerve-prostration so greatly resemble those of even coarse uterine lesions that the nerve-mimicries can very readily be mistaken for signals of actual organic disease. Nor, indeed, are they always distinguishable the one from the other, for the marvellous kinship be-

tween mind and matter is a tangled skein, not yet unravelled by dead-house or by laboratory.

What, then, are these symptoms? Their name is legion, but the most common ones are, strangely enough, those which lay and professional tradition, with singular consent, have labelled as the symptoms *par excellence* of womb disease. They are, in the order of their frequency, great weariness, more or less of nervousness and of wakefulness; inability to walk any distance and a bearing-down feeling; headache, nape-ache and backache; cold feet, an irritable bladder, spinal tenderness and pain in one ovary, usually the left, or in both ovaries. The sense of exhaustion is a remarkable one: the woman is always tired; she passes the day tired, she goes to bed tired, and she wakes up tired, often, indeed, more tired than when she fell asleep. She sighs a great deal, and her arms and legs tremble or "fall asleep" so frequently that she fears palsy or paralysis.

Other symptoms not quite so common are the cerebral ones: such as low spirits, bad dreams, nightmares and night-terrors; explosive sounds in the head, a loss of memory, suicidal thoughts, the fear of impending insanity, the dread of being left alone or of being in a crowd. Some patients are unable to protrude the tongue, or they may have weakness of vision, or a morbid keenness of smell or of taste. Others are kept away from church on account of spinal thrills and locking of the jaws, whenever they hear the lower or the tremulous notes of the organ.

The uterine reflexes are: uterine, pelvic and ovarian aches; pendulum pains swinging from one groin to the other, jerking muscles which cannot keep still, a trembling or a quivering in the abdomen, or a feeling that it needs support, which is often given by pressure with the hands. The intestines display their interest in the general neurosis, by flatulence, by noisy borborygmi, and by the belching of wind in large volumes. They usually keep bound, but sometimes they are loose, or the two conditions alternate. One very common symptom is great exhaustion after a movement of the bowels, and these movements are often caused at unseasonable hours by any simple excitement, such as the ring of the door-bell or the call of a friend.

Dyspeptic symptoms are rarely absent, sometimes they are very marked, while the tongue looks perfectly clean, even when nausea, vomiting, or diarrhœa are present.

Some nervous women are annoyed by clammy hands and feet, or by profuse sweats, which often are not general, but either local or unilateral. Thus I have seen one-half of the face always wet, while the other half kept dry. One of my patients perspired so profusely from the tips of her fingers, that they were constantly dripping and she could not wear gloves. Once I saw a hysterical nose distilling a clear serum, which for weeks dribbled away, almost in a stream. The annoyance was great, yet no treatment whatever did the slightest good; but one day it vanished as mysteriously as it came. Many nervous women are frightened by muscular cramps, or by tinglings, by loss of sensation, or by numbness in the extremities, which are deemed the precursors of paralysis. Nor does the skin escape the general sympathy. It becomes dry, harsh and scurfy, and pigmentary deposits appear under the eyes, around the nipples, and on the chin and forehead. Blondes are likely to get a mottled complexion, and brunettes may become disfigured by brown patches. Sometimes the whole complexion changes to a darker hue. In one instance this was so marked, that both the family physician and the consultant diagnosticated a case of nerve-bronzing to be one of Addison's disease.

Another very remarkable, and often very misleading, symptom is an aneurismal pulsation of the aorta in the epigastrium. Repeatedly have patients been sent to me with the diagnosis of aortic aneurism, when their sole disease was nerve-exhaustion. Lastly, abnormalities in the sexual feeling are not wanting. In the majority, all desire is quenched, or intercourse is painful; in some the sexual feeling is increased; in yet others, it is urgent, but it cannot be gratified; in a few, the dreams are erotic.

From this wealth, from this positive exuberance of symptoms, one would suppose that the diagnosis could not offer any difficulty whatever; but this is far from being the case. The laws governing woman's complex organism cannot be codified; nor can we correctly label the lesions of cerebration proper or of innervation in general. Then the instinct of causality in man leads him to forget that things seen may come from things unseen, and to attribute preferably to the seeable and to the touchable like phenomena, which may come from the unseeable and the untouchable. Naturally, then, we are likely to be misled: First, by symptoms which by common consent are deemed peculiar to uterine disease; secondly, by the co-existence of actual uterine disease, to which we attach undue and overshadowing importance. Apart from these reasons there is yet another one: the human mind, bewildered by a multiplicity of details, does not catch the meaning of their aggregate. So Goethe's traveller missed the forest by reason of the wilderness of trees around him, and the hero of our own national caricature "could not see the town, there were so many houses."

From a large experience I humbly offer to the reader the following watch-words as broad helps to diagnosis. In the first place, always bear in mind

what another has pithily said, that "woman has some organs outside of the pelvis." *Secondly*. Each neurotic case will usually have a tale of fret or grief, of cark and care, of wear and tear. *Thirdly*. Scant or delayed or suppressed menstruation is far more frequently the result of nerve-exhaustion than of uterine disease. *Fourthly*. Anteflexion *per se* is not a pathological condition. It is so when associated with sterility or with painful menstruation, and only then does it need treatment. *Fifthly*. An irritable bladder is more often a nerve symptom than a uterine one. *Sixthly*. In a large number of cases of supposed or of actual uterine disease which display marked gastric disturbance, if the tongue be clean, the essential disease will be found to be neurotic; and it must be treated so. *Seventhly*. Almost every supposed uterine case, characterized by excess of sensibility and by scantness of will-power, is essentially a neurosis. *Eighthly*. In the vast majority of cases in which the woman takes to her bed and stays there indefinitely, from some supposed uterine lesion, she is bed-ridden from her brain and not from her womb. I will go further, and assert that this will be the rule, even when the womb itself is displaced, or it is disordered by a disease or by a lesion that is not in itself exacting or dangerous to life. *Finally*. Uterine symptoms are not *always* present in cases of uterine disease. Nor when present, and even urgent, do they *necessarily* come from uterine disease, for they may be merely nerve-counterfeits of uterine disease.

SOME PRACTICAL POINTS IN THE TREATMENT OF SYPHILIS.

BY R. W. TAYLOR, M.D.,

PROFESSOR OF DERMATOLOGY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL; SURGEON TO THE CHARITY HOSPITAL, NEW YORK.

AN attentive study of the history of the therapeutics of syphilis for the past twenty years clearly shows that the object of most observers has been to attain such modification and perfection in the methods of using mercury that we may obtain all its beneficial effects, and avoid all annoying and disquieting complications and deleterious results. The experience of more than three hundred years had plainly shown that this agent alone had the most marked and salutary effect in the treatment and cure of syphilis, and it gradually dawned on the medical mind that the great disadvantages and drawbacks encountered in its employment were due to imperfection and crudeness in methods of use, and to an incomplete—I may say imperfect—knowledge of the natural history of the disease. The tangible results of this awakening are now widely seen in the teaching of to-day, in the attenuation of the dosage, and in the systematic and more lengthened course of treatment.

It is impossible to overestimate the great advance made in the treatment of this disease in the establishment of the fact that comparatively small doses of mercury given over long periods of time were more radically curative, and less, if at all, fraught with the disadvantages and dangers of the old-time heroic dosage, and of the three to six months' course.

The next notable step in advance in the therapeutics of syphilis is seen in the widespread search for modification and perfection of the old methods of using mercury, and in the building up of a new method, namely, by hypodermatic injections. The objects hoped to be obtained from each and all of these methods were the use of a minimum quantity of the drug, accuracy and precision of the dosage, rapidity of action, greater potentiality, a more permanent effect—all combined, if possible, with simplicity and convenience of administration.

The natural outcome of a more thorough knowledge of the disease, and of more enlightened and perfected methods of treatment, was the hope of its abortion or annihilation. This hope has given rise to two methods of treatment for aborting syphilis, the one local, the other general. The first method is that of excision of the chancre, combined, in some cases, with the extirpation of the lymphatic ganglia in immediate anatomical connection; and the second is the abortive treatment by means of active mercurial dosage during the primary period of the disease.

The prevention of syphilis by excision of the chancre has been attempted by many observers, and some have claimed success, and although the treatment seems plausible, it is not looked upon with favor by the majority of syphilographers. I have tried it quite extensively over a long period of time, with painstaking attention to all details, and have been convinced of its failure, even in cases seemingly very suitable to its scope. I have never seen syphilis prevented nor its course rendered less mild, though I think I have seen the evolution of the secondary stage somewhat delayed.

The abortive treatment of primary syphilis by means of early and active cauterization, a very old method, has also been tried and found wanting. A more suitably favorable instance of its employment than was offered by the case—now classical—of Berkeley Hill can scarcely be imagined, yet it failed utterly of prevention. We must, therefore, dismiss from our armamentarium those heroic procedures as prophylactic measures, and employ them only in conditions of necessity and exigency.

The abortive treatment of syphilis by mercury introduced in various ways into the economy has within a few years been recommended by several observers, and its consideration naturally brings up the question of the time at which to begin general

treatment of the disease. I think that I state the matter correctly when I say that the majority of authorities to-day are in favor of beginning general mercurial treatment at the commencement of the secondary period of the disease. I should not, therefore, discuss the question here but for the quite recent utterances of so eminent an authority as Mr. Jonathan Hutchinson, and of my friend, Dr. E. B. Bronson. Mr. Hutchinson thinks that mercurial treatment should be begun as early as possible in the primary stage (that is, as soon as the diagnosis of syphilis is made), and that it should be continued in a quite active manner for at least six months. He claims, and with great propriety, that mercury causes the absorption of the indurated nodule; that it suppresses the febrile condition incident to the early secondary stage, causes the disappearance of the eruption, and, in fact, aborts the secondary stage entirely. He concedes, however, that even after this treatment the patient is liable to tertiary manifestations. Dr. Bronson in his interesting paper offers the suggestion, based, as he says, on theoretical grounds, that we may cause the rapid disappearance of the initial lesion, and the probable abortion or prevention of the secondary stage, by hypodermatic injections around and under the nodule on the penis, into the substance of the inguinal lymphatic ganglia, and into the territory of integument "whose lymphatic vessels tend in their course to the ganglia which are the seat of the disease." With all deference to the opinion of Mr. Hutchinson, I must express my earnest conviction that the aim which he hopes for will be better and more surely attained by waiting until the evolution of the secondary stage than by beginning treatment at any time during the primary period. It must, however, be conceded that it sometimes happens that the necessity for mercurial treatment is imperatively indicated in the primary stage. These exigencies of practice I have succinctly formulated in the section on the treatment of syphilis in my *Atlas of Venereal and Skin Diseases*.[1]

In my judgment no good is produced, as a rule, by the internal use of mercury in the primary stage, for at that period it tends to render the course of the disease less orderly; very often leaves the existence of syphilis in a state of doubt; it does not prevent or lessen the severity of secondary manifestations, and, though it may retard them, it really often renders them more severe. Whether syphilis is essentially caused by a microbe we are, as yet, far from certain, but we know quite clearly its ultimate pathological processes. It is a chronic, infectious disease, manifesting itself in the development of a low grade of granulation tissue which tends to reproduction in greater or less degree in any and all of the tissues and organs of the body. I think it can be stated, without fear of contradiction, that the malign influence of syphilis upon the human organism is directly due to the infiltrations of this tissue, to the irritative and inflammatory conditions incident to the hyperæmia which accompanies their proliferation, and last, but far from least, to the secondary destructive and atrophic changes which take place in the healthy tissues in the various metamorphoses of these specific new growths. Clinical and pathological observations have shown that mercury possesses a specific power over this low order of infectious tissue, and it is very probable that its real action is in the production of its fatty degeneration and subsequent absorption.

In my judgment syphilis is not mature until the date of secondary manifestations, when the newly formed, young, round, infecting cells are proliferated in vast quantities and are thrown into the general circulation, and by it carried throughout the body. When this has occurred, I think syphilis may be said to be "ripe;" then, and not till then, we have something tangible to treat. At this time, mercury introduced into the organism can exert its marvellous powers in destroying this, then, young, nascent, infectious material, and in causing its absorption.

The foregoing clinico-pathological facts have influenced me in my opinion that it is the wisest policy, as a rule, to wait until the onset of the secondary stage before we begin a mercurial course. Further than this, my opinion has been strengthened during more than twenty years by the observation of the progress and ultimate result of cases in which it has been necessary to begin treatment in the primary period for the reasons outlined in the footnote. In some instances, by means of a prolonged treatment, a cure has been effected, but in many a disorderly

[1] Conditions in which it may be necessary or advisable to begin mercury in the primary period:

1. Where the initial lesion, from its size, depth, or extent, causes much pain and discomfort, or interferes with the function of parts, or, from activity of ulceration, threatens to destroy them (glans, clitoris, urethra, fingers, eyes, nose, lips, tongue, tonsils, breast, and anus).

2. In certain of those cases where, from its situation, the chancre may lead to infection of others—such as the fingers of surgeons and midwives, nipples on wet-nurses, chancres of the tongues of infants, and on the lips of young, careless, and thoughtless persons.

3. When the enlargement of the lymphatic ganglia is excessive and causes inconvenience and impairment of locomotion, or movement of the arms, or produces much discomfort and disfigurement (neck, submaxillary region, elbows, and groins).

4. In all cases where chancres are complicated with a pyogenic (perhaps microbian) infection, attended with pain, fever, and perhaps typhoidal symptoms (chiefly on the fingers, but also, though rarely, on the nipple and mamma, and sometimes on the penis).

5. In all cases where married or sexual relations render the early disappearance of the chancre imperative.

6. Where the extreme anxiety and unreasonable impatience of the bearer render it imperatively necessary.

7. In those somewhat exceptional cases in which severe cephalalgia, neuralgia, pains in bones, joints, and fasciæ, are precocious.

course, attended with severe and extensive manifestations, often with much cachexia and even with tertiary lesions, has been observed. As a prophylactic measure, or an abortive treatment, therefore, it is my opinion that medication begun in the primary stage of syphilis is a failure.

Dr. Bronson's suggestion I regard as very ingenious and, on its face, plausible, but I do not believe that it is capable of such thoroughly practical application as to produce the result hoped for. While I believe that in the primary period of syphilis the cell infection is limited to the part contaminated, and to the immediately contiguous territory, with more or less involvement of the lymphatic vessels and ganglia in the vicinity and at a distance, and that the blood-vessels are also the seat of specific cell changes, I do not think that with the methods now at our command we can stamp out the disease and prevent its extension and the infection of the whole economy. The limited space of territory, its extreme delicacy, and its peculiar proneness to inflammation will not admit, in my judgment, of such activity and frequency of mercurial injection as would be required to annihilate the myriads of new, rapidly forming cells. Then, again, I think that such a quantity of the mercurial salt would be required in the procedure that a general toxic effect would be produced.

All these considerations lead me to the conclusion that, with our present therapeutic limitations, we are unable to abort syphilis thoroughly in its primary stage.

Though we are unable to abort it, we are, in favorable cases—and they are legion—able to cure it. By "cure" I mean that the early lesions are made to disappear and leave no sequelæ, that the ganglia seemingly return to their normal condition, that the health of the patient seems wholly undisturbed, and may so remain, that he has no late manifestations, that upon marriage he or she may procreate healthy children, and that thereafter they present no specific lesion or affection. The means of attaining this great boon we will consider a little later on.

The three systems of treating syphilis now in vogue are as follows: The expectant, or symptomatic; the continuous, or so-called tonic treatment; and the treatment by interrupted courses.

The expectant treatment is a very easy-going one, and is fraught with danger and disaster to the unhappy person who is subjected to it. The tenets of its advocates are that we should wait until symptoms and manifestations appear, and that then we should cause their disappearance by mercury, and then wait again until another outbreak occurs. It has always seemed to me that this treatment is based upon a hopeless view of the possibility of the cure of syphilis, and upon a fear that an active use of mercury will be productive of harm. It is an unscientific and dangerous treatment, and it is well for humanity that it is growing into disrepute and disuse.

Of the continuous treatment of syphilis by mercury I can scarcely speak with more commendation than I do of the expectant treatment. I think that what I have already said in my *Atlas* in this regard fully covers the ground, so I will transcribe it here:

"A condition of tolerance is induced by the continuous ingestion of mercury, and after a time it ceases wholly to be a therapeutic agent and often to have any effect, and certainly none which is beneficial. Further, in syphilitics (I will not say what it does in dogs, rabbits, or other objects of experimentations) it very commonly produces a condition of anæmia and debility (often even when the body is fat, but flabby), and perhaps a low grade of gastro-intestinal irritation. I constantly see patients, who come of their own accord or are sent by their physicians, who have been treated continuously and without any intermission for one, two, or more years with mercury, and who still have some syphilitic lesion which refuses to disappear—perhaps dermal, osseous or articular, or even cerebro-spinal or visceral. These patients, and very often their physicians, cannot understand why it is that a treatment so constant and energetic and, in most cases, so conscientiously administered, should be productive of such unsatisfactory results. The answer to the question is clear and simple. They had used mercury long after it had ceased to be a therapeutic agent, long after it had lost its influence over the syphilitic diathesis, and, strange to say, some had escaped without serious injury, but in others the chances of cure had been materially jeopardized or rendered more remote. I have seen, during a period of many years of careful observation, so much annoyance, so much trouble, misery, and even disaster result from this method of treatment that I feel that I must raise my voice against it as being irrational and even mischievous—a perversion of one of the greatest therapeutic blessings which we possess."

My experience in hospital and private practice has convinced me that the system of treating syphilis by interrupted but carefully regulated courses of mercury alone at first, and of mercury and iodide of potassium later on, is the one most preferable, most satisfactory and practicable to both physician and patient, and the one by means of which we may almost positively promise a cure to any one with ordinary health who will systematically submit to and follow it up. All systems of treatment depend on the following methods of administration of mercury: Ingestion by the mouth, endermic medication by inunctions of ointments or soaps and fumigations, and by hypodermatic injections. All these methods have their advantages, and it is a pity that the proposers of some of them, particularly of the various forms of hypodermatic mercurial injections, do not recognize their limitations, but claim for them more extended use than their merits warrant. In what follows regarding the essentials of a treatment by interrupted courses, I shall attempt to show that the best results, which, of course, means cures, are obtained by a judicious use of any or all of these

means, as the conditions or necessities of the case demand.

In this facility and ability of selecting the proper method at the right time, and of the suitable agent for the particular lesion or affection, in my judgment, resides the art of treating and curing syphilis.

The systematic treatment of the disease presupposes a careful hygiene and an orderly and well-rounded life during its continuance.

The first question which then confronts the physician is the choice of a remedy, and though there are numerous preparations of mercury, to-day the green iodide is the one most in favor. In addition to it, I think we can place the tannate of mercury (hydrarg. tannic-oxydal) as being of particular advantage in many cases. The older authors used gray powder, blue-mass, and calomel, when they desired a prompt mercurial action, and, as they termed it, "just to touch the gums." As I will show later on, we possess methods of procedure which result more efficaciously than those agents, and which are not attended with their constant drawbacks, namely, sudden and severe ptyalism and gastro-intestinal irritation. It is rather too early to define the scope of salicylate of mercury, and of the remaining salts, once used by stomach ingestion, it is not necessary to speak here.

For all practical purposes, therefore, the proto-iodide and the tannate of mercury are sufficient. In my experience the bichloride taken by the mouth is a very uncertain remedy, of scarcely any value in small doses, and capable of great harm in large ones. Its value, however, by the hypodermatic method cannot be overestimated.

This brings us to the question of the dose. I feel fully convinced that in the reaction from large doses of mercury, formerly used, we have oftentimes gone to an injurious extreme, and that many authors recommend such small doses that the system readily becomes accustomed to them, and that they often have little or no effect whatever. I am not in the least a believer in the arbitrary division which has been made of mercurial agents into "tonic" doses and full doses, or of the criteria by which they are judged, and I have found that even among intelligent men these artificial divisions are misleading rather than productive of precision.

Every case of syphilis is a law unto itself as regards the quantity of mercury which will be required to cure it; therefore, all that teachers can do is to state approximately the dose usually required, and the conditions under which it should be lowered or increased.

The tolerance of mercury in the system is very largely dependent upon the condition of the stomach, the pharynx, and of the mouth, and he who can keep these in as near perfect order as possible is the man who can, in the vast majority of cases, give mercury in such quantities that the eradication of syphilis may result. Those observers who have formulated the doses of mercury they regard as proper by their effect on the gums, and stomach, and bowels, have, I firmly believe, in very many instances based their theorem upon serious error, for the reason that very often temporary hyperæmia and exudative swelling exist in these tissues, due to local causes, which if removed would allow the introduction of mercury into the stomach, or by other methods, in the necessary quantity. Therefore, our duty in every case is to see that the mouth and gastro-intestinal tube are in perfect condition, and that all sources of irritation are prevented or removed. When this is done there will be few cases which are refractory to the use of the drug.

It is well to begin with a pill or tablet containing one-fourth or one-fifth of a grain of the proto-iodide of mercury for persons of ordinary build, but for very large and robust subjects one-third or one-half a grain may be given. This dose may be taken three times a day, and then, if the symptoms do not yield (assuming that there is much constitutional reaction), if the lesions do not show signs of involution, and if the ganglia do not perceptibly subside, a fourth and even a fifth dose may be given within the twenty-four hours. The dose of the tannate of mercury is from one-half to one grain.

I am firmly convinced, from my reading and my experience and conversations with physicians, that since the adoption of the long mercurial courses, an easy-going, happy-go-lucky feeling has taken hold of many of them in their treatment of syphilitics. They are told in some of the books, and at some colleges, that syphilis can be cured, but that a treatment of two to three years is necessary. This teaching, to my mind, has engendered a feeling of false confidence and a tendency to superficial routine. It is true that we can cure syphilis, and that mercury is our weapon, but that happy result can only be accomplished by constant care and watchfulness on our part, by feeling our way, by pushing our remedy and keeping it well in hand so as to get all of the good there is in it, and to avoid all drawbacks and harm which may arise if they are not looked out for. Therefore, I say, we must not be blinded or hampered by finely spun theories, but push on, conserving our patient's health and nutrition, with an eye always on one object, namely, the destruction, as rapidly as possible, of the young, rapidly proliferating cells of this active infecting disease, and their removal as quickly as possible from the parenchyma of organs and tissues before they shall have had time to induce those subtle, but often dangerous, structural changes which bring in their wake functional disturbances, deformities, invalidism, and perhaps

death. In my judgment, the early secondary period is the crucial one in the life of the syphilitic, and upon the activity and suitability of the treatment at this time his future immunity largely depends. It seems to me very probable that much of the late rebelliousness and malignity of syphilis is due to the fact that the newly formed infecting granulation cells and the concomitant subacute inflammation induce in tissues and organs, particularly delicate ones, structural and nutritive changes which predispose them to subsequent low grades of inflammation and cell increase, beside a repetition of the essential syphilitic processes.

There is nothing extraordinary in the pursuance of an early active mercurial course. It requires of the surgeon a fair knowledge of the disease, a moderate amount of moral courage, never-ceasing watchfulness and care of his patient. It is well that the first mercurial course of this treatment should be both active and rather prolonged. Therefore, we should endeavor to keep the patient under the influence of the mercurial treatment for at least three months, and, if possible, four or five, and even six, if necessary. In most cases, at the end of three months, during which the remedy should be taken quite steadily, the patient's condition will be found to be so reassuring that a stoppage of the dose may be allowed for one, two or even three weeks. In favorable cases, and by far the greater number, patients will affirm that they feel as well as they ever did, and in private practice it is rare at this time to see any but the mildest and most trifling lesions, such as spots on the tongues of smokers or drinkers, or scaly patches in those subject to simple skin affections.

The next course may last but two or two and a half months, when perhaps about four weeks of freedom from drug-taking may be granted. Then the medicine may be used again, and in the course prescribed. During the second year I am accustomed to combine iodide of potassium with the mercurial salt, using either the bichloride or the biniodide. During this second year, all things being favorable, the intervals may be lengthened, though a full dose of the combined drugs should be given when treatment is being followed. The morale of the patient is always much improved by these periods of liberty.

It must be understood that syphilis in private practice is wholly different from that of our dispensaries and hospitals, that in the former perfect cures are obtainable, whereas in the latter we really practise a series of patchings-up, as we may say. It is most gratifying to hear, as I and, of course, other surgeons do, patients express their wonderment at the seeming benignancy of syphilis, the contemplation of which at first filled them with apprehension, and even horror.

With this general outline of the system of interrupted treatments, I shall now proceed to show how in certain cases the various methods of treatment may be utilized to the great benefit of the patient.

Many years ago I was very much impressed with the fact of the very rapid disappearance of syphilitic lesions, particularly of the secondary period, around and in the vicinity of the sites upon which hypodermatic mercurial injections had been made. I then learned that the early lesions, when recent, were then very readily dissipated, and that their retrogression was slower in proportion to their duration and to lateness of appearance. The observations then made convinced me that the local and regional effects of mercury were also possible, and that these results were an important factor in the general scheme of treatment. I shall now proceed to show, in a general manner, the indications for these local mercurial treatments, and the means we have for their practice.

There is one fact that the surgeon should always keep in mind in the treatment of syphilis, namely, that all syphilitic lesions, even the most minute, are to be feared as possible sources of continuous or intermittent reinfection of the system. The morbid cells contained in these lesions are capable of great, even infinite, multiplication, and the so-called syphilitic relapses are due to the continual recurrence of these cell proliferations, which occur from morbid foci left over at an earlier date. While all deposits of syphilitic new growth in any part or tissue are of much danger in their ultimate results, those which occur in the lymphatic ganglia, in the lymphatic vessels, and around bloodvessels are especially so by reason of the activity of growth of these organs, of their very ready transposition to all parts of the body by means of the lymph and blood circulation. Many cases of syphilis do badly, in my judgment, for the reason that mercury by the mouth does not invariably act radically upon the lesions when they have become a little old. If in these cases the remedy is brought into more intimate local contact with these new growths or, as the many call them, infecting foci, an incalculable gain is the result. Therefore, I claim that the art of the surgeon in treating syphilis is shown when (the exigencies of the case demanding it) he is not at the end of his therapeutic resources when he has made his patient swallow a pill in orthodox fashion, but has such practical familiarity with all the other methods of using mercury that he can adapt them to the peculiarities and varying necessities of the case.

Taking the average of cases as we find them, the most successful results are obtained by men who are not routinists. Great as are the value and power of mercurial treatment by stomach ingestion, in very many instances it is for longer or shorter periods found wanting, and then the temporary adoption of

other methods will often produce the effect we desire.

My readers are familiar, or can readily become so, with the technique of mercurial inunctions and hypodermatic injections, and it is probable that they know the conditions which must guide them when prescribing mercurial fumigations; therefore I shall not use space to give these details, which are accessible to all.

I shall now further elaborate my general scheme of the systematic treatment of syphilis by interrupted courses by stating, in a general way, the condition in which mercurial inunctions and fumigations, and hypodermatic injections may be employed, according to special indications, to exigencies of various gravity, and by reason, perhaps, of utility.

Mercurial inunctions are used by some surgeons, particularly abroad, as routine method of treatment, but this is not largely the case in this country. I prefer them as an adjuvant reserve and emergency resource, since by this course I think we get the best results.

The early rashes of syphilis are best treated, in my judgment, by mercurial inunctions, both during their active and chronic stages. Thus, if the erythematous syphilide is exceptionally severe and persistent, it is well to leave off internal pill dosage and use mercurial inunctions, according to the usual plan and the indications presented by the case. When the eruption has disappeared the pills are resumed again, and the ointment discontinued, unless perhaps some small patches require its continued use.

Then, again, early in the secondary stage, we can often greatly assist the cure by direct mercurial action upon the enlarged lymphatic ganglia, particularly when they are abnormally hyperplastic. It is a valuable, even a golden, rule never to be content with the action of mercurial pills, unless we see a decidedly rapid subsidence of the lymphatic ganglia. Failing to produce this effect is evidence that our remedy is not carried in sufficient quantity by means of the circulation, and that local medication is necessary. Upon the inguinal regions we can always produce a decided effect by mercurial inunctions, and the same may be done with the ganglia of the arm in chancres of the fingers; with those of the neck when the chancres are upon the head, lips, or within the mouth. Unusually large infiltrated syphilitic ganglia, wherever situated, are signs of evil omen, and, as a very general rule, it may be said that they require an active regional treatment. In like manner, hyperplastic lymphatic vessels and hyperplastic bloodvessels must be locally and actively treated. It may be well to state that the inunctions should be made over the ganglia and upon the region supplied by their lymphatic radicles.

It is my custom in hospital practice to order the inunction treatment for all those cases of early papular syphilides, and direct that the applications shall be made directly to the parts upon which the lesions are present. Thus, taking the head and neck one day, and one or two arms the next, and the other portions of the body in anatomical succession, thus going on day after day; if there are no contrary indications, the whole rash is brought under a local mercurial treatment, and, at the same time, the general system is affected by the absorption of the drug into the circulation. When the rash has disappeared internal treatment may be employed, usually, however, after a suitable interval of freedom from medicine-taking.

In like manner later-occurring and usually more special localized eruptions of all varieties may be treated, the aim in all instances being to produce a decidedly regional mercurial effect at the same time that systemic absorption is produced.

It has long been my custom to order mercurial inunction with all local precautions upon the neck and under the jaws, even upon the temple and occiput, in appropriate cases of early and late syphilitic meningeal and cerebral disease. In the cephalalgias of the early and late periods, in the neuralgias of the cranial nerves, and in syphilitic neuralgias in general, I am a firm believer in the efficacy of a well-ordered, carefully applied regional treatment. In looking over my notes I find that in cases of optic neuritis, neuro-retinitis, retinitis, choroiditis, and iritis, much benefit and even cure have been brought about by these local inunctions. In some instances of great gravity the effect has been noted as gratifying and even marvellous. It is always well in these urgent cases of syphilis of the head generally, particularly of the brain and eyes, to administer simultaneously iodide of potassium in free and increasing doses. When mercury is then being rubbed into the neck, we must carefully, very frequently, watch the gums, mouth, and throat, and use all local and hygienic measures to keep them in a state of health, for the occurrence of ptyalism and gingivitis may necessitate the discontinuance of the inunctions, and we may lose our control of the disease.

Many of the earlier pustular eruptions of syphilis are really papules surmounted with a small cap of pus, and for them mercurial inunctions are especially adapted. Where, however, the pus production of syphilitic skin lesions is great these applications are liable to produce dermatitis. I think we are sufficiently advanced in the study of bacteriology as applied to syphilis to affirm that the pus producing lesions of that disease, and chiefly those seated on mucous membranes and the skin, are due to pyogenic microbes. In many instances these microbes

produce pustular eruptions upon the skins of syphilitics for the reason that the latter are prone to fall into inflammation on even slight irritation. In other words, the vulnerable skins of syphilitics offer a favorable soil for these pus-producing microörganisms. In my opinion many cases of the ecthymaform, the rupial, and the superficial serpiginous syphilides are due to this microbian complication. Then, again, these same minute organisms induce purulent foci in syphilitic new growths, papular and tubercular. These cases are striking instances of a general systemic infection, complicated by local pyogenic infections. My experience teaches me that in cases of syphilides with much pustulation and encrustation the common antiseptic remedies are better, certainly for a time, than mercurial inunctions, which will prove beneficial for the resulting thickenings of the skin.

It is also important to remember throughout the course of syphilis that any simple inflammatory conditions of the skin or mucous membranes should be promptly treated and dissipated, since they may become engrafted with the syphilitic impress or new growths.

Besides being treated with careful antisepsis, the initial nodule should be covered with mercurial ointment or calomel. In like manner mucous patches and condylomata in both sexes should be cleansed and dusted with calomel.

The hypodermatic method of treating syphilis is, within certain well-marked limitations, one of much practical value, and to it we accord a subordinate place in our armamentarium. Its advocates have failed in their hopes of its very general use, and its substitution for the older methods, because they claimed for it a wider sphere of usefulness than its merits will really entitle it to. Then, again, the profession has been bewildered by the great variety of salts of mercury, both old and new, and those thought to be pharmaceutically improved and modified, which have been vaunted as the perfection of specific medication. Each prominent advocate has exploited his own favorite preparation as being better than all the rest, and the bulk of the profession, being in a quandary, have marvelled, and used none of them.

There can be no question that by the hypodermatic method of using mercurial salts we may use a minimum dose, we may insure precision and accuracy in the amount of the drug, and that we may obtain rapidity and perhaps rather greater potentiality of effect, with much less liability to mouth and intestinal drawbacks, in a simple and convenient manner. But weighing against these advantages we have counterbalancing facts in the widespread repugnance of patients to the treatment, the pain and soreness, the formation of indurated nodules and plaques, the occasional occurrence (even with the greatest care) of abscesses, and when the insoluble salts are used, the danger of embolism. Still, as I have said, the method is useful at certain times, when used with intelligent and careful technique.

My experience has taught me that the soluble salts of mercury are the ones to be employed as being more manageable, equally effective, and that, except in very rare instances where calomel may be used, injections of insoluble salts of mercury should not be employed. In my judgment, a pure watery solution of the bichloride of mercury is the best all-around preparation for hypodermatic injection in every possible respect. Of this, two solutions may be kept on hand; the first, in which one-twelfth of a grain of the drug is dissolved in ten drops of water, and other, containing one-eighth of a grain in the same quantity of the menstruum, both of which may be taken as standard doses. The weaker solution is the one with which to begin treatment for adults, and the stronger one can be used if the case requires a larger dose. For women and children a less quantity should be injected. Full details of the method of using hypodermatic injections of mercurial salts in syphilis will be found in my textbook. It will often be found that these injections will cause the rapid subsidence of specific lymphatic swellings, when made in their vicinity and in some cases into their substance. Localized and regional eruptions can be made rapidly to retrogress and disappear by their use. This rapidity of action is often very necessary when the lesions are on such exposed parts as the face, forehead, neck, hands, and wrists. The injections may be made very close to the seat of the eruption, in very urgent cases, on the forehead, scalp, and nucha, and also upon the neck and near the hands on the flexor surfaces. If great care is taken they will give rise to no trouble, even on very delicate parts.

The cephalalgias of syphilis and the various neuroses may very often be promptly relieved by injections made as near the seat of the trouble as possible or practicable. In many of these instances there is more or less gastric intolerance from various acute or chronic causes, and then, by means of the injections, we may push on vigorously with the specific treatment.

Where the early eruptions are very extensive and copious, I prefer the mercurial inunctions, but even in these cases hypodermatic injections may be used with efficacy.

In some instances, happily rare, mercury taken by the stomach acts as a general depressant, and the nutrition is much impaired. I have many times seen these grave drawbacks and seeming contraindications promptly dispelled by the use of the injections of the bichloride of mercury. In such

cases it is well to begin with quite a small dose and then work upward as fast as we can.

In ocular troubles, both mild and serious in their course, these injections may be used with benefit, but owing to their gravity I am disposed to rely more commonly on mercurial inunctions. It is in these threatening cases of grave intra-ocular trouble that we sometimes see marvellous results follow the employment of regional injections of calomel.

Osseous, bursal, fascial, and articular lesions of syphilis, particularly the earlier ones, are often much benefited by sublimate injections. In such cases, however, it is well to administer synchronously iodide of potassium in full and increasing doses. For this class of osseous and fibrous tissue lesions, however, we must never forget the known efficacy of mercurial inunctions.

There are many other conditions in which sublimate injections may be employed as a method of utility and emergency, which will become apparent to the surgeon after he has familiarized himself with their value and approximative scope.

Mercurial fumigations are of great value and are capable of wide use, though with proper limitations. They are, in the main, useful in cases of stubborn localized and even general eruptions, and particularly in the chronic scaly stage of early and late eruptions, and also in almost all cases of pustular ulcerative and serpiginous syphilides. They must be used with caution, and the patient should be carefully watched while undergoing their influence.

The foregoing facts and considerations, I think, will clearly show that the treatment of syphilis is far from being a matter of routine or a mere problem of dose-arithmetic, as many seem to think. To be thorough and successful, it must be based on broad principles and upon an accurate and full knowledge of the disease. The physician should be well versed in general medicine, as well as in syphilis, and in its management he should be zealous, watchful of all conditions and complications which may arise, and ever ready for such modifications and expedients in treatment as the case may demand. Thus equipped, it is within the power of any physician to make himself the master of syphilis in the greater number of cases and to be able to promise his patient ultimate freedom from his disease.

40 WEST TWENTY-FIRST STREET, N. Y.

THE OIL OF EUCALYPTUS IN SOME FORMS OF MALARIA.

BY J. H. MUSSER, M.D.,
ASSISTANT PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA; PHYSICIAN TO THE PHILADELPHIA AND PRESBYTERIAN HOSPITALS.

THREE years ago the writer called attention to the value of the oil of eucalyptus in some malarial affections in a paper presented to the Philadelphia County Medical Society. It would not be referred to again, save that it was quoted extensively, and, as the writer now holds a different opinion regarding the value of the drug than he held at that time, it is only proper that a record should be made of his recent experience with it. This experience is considerably opposed to the conclusions in the former article, and is, as the writer believes, more accurate.

When the paper mentioned was published, we were not familiar with the organisms which are found in the blood of patients suffering from malaria, so well described first by Laveran, and since then by Councilman, Osler, Van Dyke Carter, and others. The recognition of the bodies in the blood, and the effects of treatment of the malarial patients upon them, make any conclusions regarding the value of the drug in acute malaria tolerably exact. Naturally, therefore, the writer was induced to study a number of cases with the object of finding the effect on the organisms when eucalyptus was administered to the patient. The studies were made, of course, with other drugs, among which was quinine, and, regarding it, the well-known conclusion that the organisms, or the bodies, disappear quickly after the administration of the drug, was upheld. It was different, however, with regard to the oil of eucalyptus. The drug was administered to some fifteen cases, and the blood carefully studied, just prior to the administration of the drug, and during it. In one case only were the organisms found to disappear entirely while the oil of eucalyptus was used. In other cases the drug had to be discontinued and quinine given in its place, in order to control the paroxysms and clear up the blood. Careful temperature records were made of all the patients, and the charts show that the drug was of no use in true acute intermitting fever.

Reference to the article previously published shows that at the time the writer's studies therein summarized were made, he concluded that the oil of eucalyptus was of decided value in about 33⅓ per cent. of all cases of intermitting malarial fever. This is in direct variance with the more exact scientific studies that have been made, and is worthy of a possible explanation. It was found, for instance, in a large number of cases of intermittents admitted to the wards of the Philadelphia Hospital, that without the use of any drugs, and without any particular form of diet, but simply from change alone or removal from the infected locality —a truth which is well known — the intermittent paroxysms grew less and less in severity and duration, and after intervals of from three to ten days would disappear entirely. In other words, under favorable circumstances the disease is self-limited. This is a probable explanation for a large number of the cases of intermittent fever that were pre-

viously referred to. A second explanation for the favorable effects of the oil in the first class of cases may be because of the mental impression which the visit to the hospital and the exhibition or the use of a new drug made upon the patient. The subject knew well that quinine was always given in intermittent fever, and without one word from the physician could well see that he was treated in some other way. The self-limitation of the disease, the mere fact of taking medicine, with the added fact, possibly, of taking a new drug, were sufficient to produce a strong mental impression, whereby the course of the disease was changed, or even checked entirely—an effect well known, and particularly noted in the old records regarding the natural history of malarial fever.

The results of these exact studies have not been encouraging, it is true, and yet the writer firmly believes that the oil of eucalyptus is of particular service in cases that might be called habit-chills. It is quite certain that one sees persons with intermittent fever in which, while in a measure controlled by quinine, yet, even after full saturation by this drug, the chills continue. Over and over again such has been the writer's experience, and others have called his attention to the occurrence of similar cases in their practice. Dr. Girvin recently told the writer of a case of intermittent fever in an old man which did not yield to the anti-periodic doses that were proper, but which continued with the same degree of regularity and severity as before the administration of the drug. The patient was seventy-five years of age; he could not state where he contracted his malaria; he did not reside in a malarious district; he improved within three days after the administration of the eucalyptus; the chills lessened in severity, and in a short time the paroxysms ceased entirely. The writer recently had a middle-aged lady under his care, who contracted malarial fever in New York State. Large doses of quinine and arsenic were given without result, even after removal from the locality. When the oil of eucalyptus was given she began to improve, and ten days after its administration was entirely free from chills and fever. Unfortunately, no cases of this character have been studied with regard to the condition of the blood, although the writer believes organisms could not have been found in it, and that the chills recurred from habit.

While here and there isolated cases of this character may be found in which the drug has proved of value, undoubtedly one does see a great number of cases with malarial symptoms that are benefited by the oil of eucalyptus. In the paper previously referred to, the writer quoted eighteen cases of vague intermittent malarial affections, of which fourteen were positively benefited by the drug in question. A large experience since then convinces him that it is of service in cases of neuralgia occurring in persons who live in a malarial district, and in headaches, generally congestive, not due to functional or organic disease in other portions of the body. Then the large class of cases who suffer from paroxysms, either daily or every other day, characterized by headache, languor, a general aching with sensations of heat and flushings, and even for an hour or more of fever or feverishness, with or without antecedent chilliness, are actually cured by the oil of eucalyptus. They are generally most stubborn, and do not yield to quinine. They appear to be, at least in the cases the writer has studied, due to malaria or to paludal intoxication, not sufficient to cause persistent blood-change, or in which one or two crops of growths of the organism alone took place, and then the organism ceased to exist and the symptoms were the results of their growth and possibly death. It is true, the blood has never been studied. Certainly careful examination of the body does not show the presence of any disease, either catarrhal or suppurative in character, which might cause the paroxysms. In this class of cases just referred to, and which the writer has seen benefited, the ofttime gastro-intestinal catarrh of some forms of malaria was absent. And it is well to exclude such cases, for no doubt they often yield symptoms very much like the milder forms of malaria.

Still a third class of cases have come to the writer's notice which are also benefited by the oil of eucalyptus. It is that large class that do not get well after quinine has been used, and used successfully, to control the paroxysms of intermitting fever. After the paroxysms have been controlled, symptoms continue, intermitting in character, which do not leave, in spite of the continuance of the drug in large or small quantities. Thus, in the writer's personal experience after the control of an intermittent, the patient suffered from daily paroxysms of headache with flushings, with an awful sense of heat and burning, and with the most intense lassitude and general aching. Notwithstanding full cinchonism was kept up for days, a paroxysm usually occurred in the middle of the day, and the desire for food was lost entirely during its continuance, which was for three or four hours. The continuance of quinine, the discontinuance, the use of it in smaller doses, failed entirely to give any relief, and only after the oil of eucalyptus was taken three times daily, six to seven drops at a dose, were the uncomfortable symptoms controlled. It is well known that arsenic is of service to complete the cure of a case of malarial fever, of whatsoever form, which has been controlled by quinine. The writer believes that in the same sense the eucalyptus is of value, and yet he cannot think that its value is due to the same reason

that arsenic is thought to be of service. The latter drug is used if anæmia is striking, and it is believed that its value is because of its beneficial effects upon the anæmia. This is the commonly accepted view, but we are inclined to think that it is of use in all forms that are stubborn, independent of the condition of the blood, and that its mode of action is no more known than the mode of action in similar cases in which the oil of eucalyptus is of service.

CONCLUSIONS.—From recent studies the following conclusions may be presented:

First. Intermittent malarial fever is a self-limited disease, and a large number of cases get well on removal from an infected locality.

Second. The oil of eucalyptus is of no service in cases of intermitting fever in the blood of which the organisms that are the possible cause of the malaria are found.

Third. The so-called habit-chills are relieved or checked by the use of the drug.

Fourth. Malarial neuralgias, malarial headaches, and vague intermittent symptoms, even complete but mild paroxysms, independent of the presence of any local organic disease, but due to malarial intoxication, are relieved by eucalyptus. The proof that they are due to malarial intoxication has not thus far been found by an examination of the blood, it is fair to state, but only because of the residence in the malarial locality, and because others in the same locality are affected with the disease.

Fifth. After quinine has controlled the paroxysms of intermittent fever and cleared the blood from organisms, eucalyptus will relieve or cure abortive paroxysms, intermittent neuralgias or headaches, or those marked symptoms of malaise, prostration, loss of appetite, and feverishness that are often seen.

Sixth. A dose of five drops, four times a day, preferably administered in capsule, is sufficient to produce the desired result.

INTESTINAL ANASTOMOTIC OPERATIONS WITH SEGMENTED RUBBER RINGS, WITH SOME PRACTICAL SUGGESTIONS AS TO THEIR USE IN OTHER SURGICAL PROCEDURES.[1]

BY A. V. L. BROKAW, M.D.,
OF ST. LOUIS, MISSOURI.

THE future of Intestinal Surgery is indeed encouraging. One after another the many difficult problems are being solved, and conditions heretofore considered so formidable are being reduced to a state of simplicity. It is hardly necessary for me to review the various improved methods of dealing with conditions indicating the performance of intestinal anastomotic operations, or making a rapid and safe resection by means other than the slow, tedious suturing. To obtain good results, time will be found to play a most important part; everything will often depend upon the rapid completion of such operations. The purpose of this paper will be the consideration of intestinal work generally.

For many months I have been experimenting with segmented rubber rings in all the anastomotic operations, and such operations as gastrostomy, cholecystotomy, duodeno-cholecystotomy, jejuno-cholecystotomy and circular enterorrhaphy. The rings used by me are rapidly made—during an operation, if necessary. All that is necessary is some rubber tubing, or a soft, ordinary rubber catheter, and some catgut. I prefer tubing one-sixteenth to one-eighth of an inch in diameter. A section of this of sufficient length to make a ring of the desired aperture is cut into from four to eight segments. Passing heavy strands of catgut through the lumen of these pieces, the ends are tied tightly enough to bring the ends of all the segments together, forming an oval ring. To the catgut strands are tied from four to six silk apposition threads, twelve to fourteen inches long, and the attachment of needles to these threads renders the ring ready for use. Another method is to pass a heavy, double strand of catgut continuously through the segments several times; approximate the ends of the segments, and push the ends of the catgut into the tubing. This ring will have a better surgical finish, and, after the apposition threads are tied between the segments, the ring will maintain its perfect form until the catgut is absorbed. The rings were passed as early as the fifth day, in one of my experiments. In forming an anastomosis, after ordinary No. 6 darning needles are attached to the apposition threads, compress the ring and pass it through the opening made in the lumen of the bowel, then pass the threads through the intestinal wall from within outward. Ascertaining that the ring rests well in place, proceed to the second in the same manner; appose, and after scarification of the marginal serous surfaces, as suggested by Senn, tie the apposition threads. When possible, it is well to utilize omental grafts, which add to the security.

With two such rings, circular enterorrhaphy may be performed, the rings corresponding in size to the lumen of the bowel, care being taken that they are not so large as to press too much upon the delicate mucosa or to overstretch the bowel, as a local gangrene might then follow. Introducing a ring at each end of the gut, at the point of section, the threads are passed through the wall less than one-third of an inch from the divided margins. The distal end of the gut is invaginated, and the proximal gut pushed into the distal, bringing the serous surfaces in contact. The threads are then tied, and a few Lembert sutures added, the entire operation

[1] Read before the Southern Surgical and Gynecological Association, Nashville, Tennessee, November 13, 1889.

requiring less than ten minutes. In one-half of my experiments with this operation, the results were excellent; of the fourteen dogs operated on by this method, in seven the results were all that could be desired; marked stenosis was found in several cases, and in all a ridge at the seat of the operation. Because of the high mortality, circular enterorrhaphy cannot be compared to lateral approximation. The use of the described segmented rubber rings is not limited to the intestinal tract, but they will be found of great aid in performing all the operations named. In gastrostomy a single ring is used, about an inch and a half in diameter, with six to eight apposition threads. The stomach drawn through a median incision and the opening made, the ring is introduced and the stomach returned to the abdominal cavity. The needles are then passed through the abdominal walls, and the threads tied in pairs, and if desirable the margins of the opening in the stomach may be stitched to the skin, the operation being complete in fifteen minutes or less.

In cholecystotomy, after packing the neighborhood of the gall-bladder with flat sponges to prevent accidental leakage, the viscus is aspirated or incised, and the contents removed. Enlarge the opening sufficiently to admit a small, segmented ring of three-quarters of an inch in diameter, with six to eight apposition threads; pass the threads through the wall of the gall-bladder from within outward, uniting the skin and wound margins by a few extra sutures. The use of the ring will remove the danger of extravasation, and save time. The gall-bladder may be united to the intestinal tract in two ways. Introducing a ring into the gall-bladder, another into either the duodenum or jejunum, the parts are placed *vis-a-vis*, and the threads tied; a few Lembert sutures complete the operation. I believe it will be but a question of time when the ring within the gall-bladder will find its way into the intestinal tract. In using a single ring, the intestine is clamped, and the abdomen packed with flat sponges. A ring is used with the threads looped, each loop containing a needle. An incision of half an inch is made in the *intestine*, after the gall-bladder has been emptied by incision. A ring one-half inch in diameter is introduced into the intestine, and the threaded loops passed through the intestinal walls less than half an inch from the wound margins. After passing the threads through the intestinal walls, the loop may be cut and one-half only carried through the gall-bladder, then tying the halves. A few extra Lembert sutures complete the operation. This description applies to either duodeno- or jejunocholecystotomy. These segmented rings may also be used in attaching cyst walls to the parietes when removal is contraindicated, or impossible. The same treatment might apply to abscesses or other accumulations where free external drainage is indicated. In a recent paper on this subject, I mentioned a new procedure of closing large wounds of the intestine, especially gunshot, where by ordinary suturing stenosis would result. My experimental work with this device has been highly successful. This method applies to wounds of the surface of the intestine; those of the mesenteric portion usually require resection. By this simple method, wounds the size of a half dollar may be closed in less than five minutes. The wound being trimmed and enlarged with scissors, a ring two and a half inches in diameter, made of eight segments of tubing, with six apposition threads, two on each side, is so arranged that when the apposition threads are tied, the ring is held bent evenly on itself. Such a ring is introduced into the bowel, the end apposition threads passed, then the lateral, the ring doubled on itself, the end threads tied first, then the lateral, using a single catgut suture in drawing the wound margins together at the point of flexure in order to prevent eversion. A few Lembert sutures complete the operation. If two wounds are close together in the same loop, a lateral anastomosis might be formed, if possible. With more than two wounds close together, excision and lateral anastomosis will require less time than circular enterorrhaphy, or the sewing up of several wounds. Other conditions where the single ring may be used are perforating ulcers, fistulas, etc.

The great advantage of the segmented rubber rings over other devices used, is the simplicity of their construction and the rapidity with which any number may be made. The large aperture of segmented rings makes it possible to perform ileocolostomy by the following method, which I believe is original: The ileum being divided a short distance from the cæcum, the divided end of the distal bowel is invaginated into itself and secured by a continuous suture through the serous and muscular coats. Above the proximal end a clamp is placed, and a ring adjusted to the lumen; a slit is then made in the convex surface of the ascending colon, and a ring introduced. The bleeding checked, the proximal end of the divided ileum is inserted into this slit, the threads tied and Lembert sutures added. This operation may be quickly performed, and is indicated in such cases as irreducible intussusception of the ileum into the cæcum and malignant disease of the colon.

While carrying out my study of this subject, I made experiments with wholly absorbable rings. They present no practical advantages over the rubber segmented rings, require a longer time in preparation, but very much less time, however, than Senn's bone plates. The aperture of the rings may be made as large as desirable. The absorbable rings are very readily made by decalcifying the long bones

of chickens, or the long bones of small animals; the process of decalcifying being the same as for making bone drainage tubes as described by Macewen (*Year-book of Treatment*). Through four or more sections of such decalcified bone tubes, are passed continuously strands of catgut in the same manner as described for making the segmented rubber rings. After completing the rings, they should be subjected to pressure for a few minutes, then irregularities removed with scissors, and the rings placed in alcohol between glass slides such as are used in microscopical work. The attachment of the apposition threads is exceedingly simple, the threads being tied between the segments of decalcified bone tubing to the central catgut strands. A second wholly absorbable ring may be made from the arteries of an ox, or other large animal, the preparation being very simple. The arteries to be used are dissected out from their sheaths, cut into short segments, boiled for a few minutes, and glass rods inserted into the lumen to maintain a proper tubular shape. The rods are then placed in strong alcohol. After a few days, the sections of the arteries may be drawn from the rods and placed in alcohol. Through four or more short sections of arteries so prepared are passed continuously double strands of catgut, and a ring formed in the same manner as the described segmented rubber rings; the apposition threads are attached between the segments likewise. For the closure of small wounds of the intestines, I have devised a method of quill suturing which has experimentally given excellent results. The suture to be described is wholly absorbable, and is to be recommended particularly for the simplicity, safety, and rapidity of application. Preparation of the absorbable quill suture is an easy matter. The tibia of a young ox is boiled sufficiently to remove excess of grease and oily matter, is then sawed through transversely into two or three parts, and placed in 30 per cent. solution of hydrochloric acid, the acid being changed every second day until decalcification has taken place. Remove excess of acid by soaking the sections of bone in water to which an alkali has been added. The bone may now be cut with a penknife into rods from one to three inches in length, one-sixteenth of an inch in thickness, and one-fourth of an inch in width. Small openings are made in the bone rods for the passage of the apposition threads, which are attached in this manner: A strand of chromatized catgut, or well-prepared juniper catgut, thirty inches in length, is doubled and a single knot made in the middle of the doubled catgut strand (silk may be used if preferred), the loop and end threads are passed through small openings made in the decalcified bone rods. The rod should be perforated at points half an inch apart, the loop being passed through first, and the single threads through the openings on either side. The manner of applying this suture is as follows: After clamping the intestine, the approximation threads of each rod should be threaded to separate needles, the rod introduced through the opening in the intestine, and the needles passed through the intestinal walls from within outward, about one-fourth of an inch from the margins of the wounds; the second rod is applied in the same manner; traction is made upon the threads to see that the rods rest well in place; the central double threads are now tied, and lastly the single threads. One or two extra Lembert sutures may be added if thought advisable; usually it will not be necessary. This method of suturing will be found to bring into perfect apposition the serous surfaces, and reduce to the minimum—in fact, to do away with—the tendency to eversion of the mucosa. The rapidity of the application will appeal at once to the surgical mind. I claim for this suture accurate, rapid and safe closure, particularly of small wounds of the convex surface of the intestine. In cases of emergency, short sections of rubber tubing may be substituted, but will require an additional Lembert suture or two. Very large wounds may be closed, with less likelihood of stenosis, by use of the single segmented rubber ring as described. There is a brilliant outlook for the possibilities of intestinal operations. The application of anastomotic methods especially is to the progressive surgeon a field of unlimited developments, and with a thorough understanding of its principles one is master of the many difficult situations. The indifferent success which has been almost the rule in the past, will give way to a brighter future. The former difficulties arising in the cure of fecal fistulas need no longer be taken into consideration, for by these new procedures assurance of perfect results awaits the operator. Who would now treat a gangrenous hernia leaving the gut in the wound, to discharge its fecal contents in such preternatural situation? Such treatment, I believe, will soon be a matter of the past.

Appended is a series of operations, with the results:

Gastrostomy, two experiments, two recoveries.

Gastro-jejunostomy, three cases, two recoveries, one death from peritonitis (dog tore out one suture, eight days after operation).

Jejuno-ileostomy, one case, result perfect.

Ileo-ileostomy, two cases, one death due to perforative peritonitis.

Ileo-colostomy, two cases, two perfect results.

Colo-colostomy, three cases, one death.

Ileo-rectostomy, two cases, perfect results.

Circular enterorrhaphy, fourteen cases, seven deaths.

Duodeno-cholecystotomy, three cases, two deaths from peritonitis. For anatomical reasons, this operation is very difficult to perform on a dog.

Single Ring
- Partial Duodenectomy, two cases, one perfect result.
- " Jejunectomy, two cases, two perfect results.
- " Ileectomy, four cases, one death.
- " Colectomy, two cases, two perfect results.

Summary: Intestinal anastomotic operations, fourteen cases, three deaths.

Circular enterorrhaphy, fourteen cases, two deaths.

The single ring formed of eight segments of tubing was used in closing wounds varying in size from a quarter to a half a dollar in nine cases with one death. The clamp devised by me and used in these operations is made of No. 12 copper wire, covered with unperforated rubber tubing of small size.

CLINICAL MEMORANDA.

MEDICAL.

Dengue.— Break-bone fever, spotted fever, Dandy fever, or Abu er rikab (Father of the knees), as it is called in Arabic, has been raging as an epidemic over the whole eastern coast of the Mediterranean from Alexandria to Constantinople since early in August, affecting Smyrna and Beyrout the most severely. In the latter place it is estimated that over 75,000 people, out of a population of 100,000, have been affected. Early in the attack, only those on the plains suffered; later, the fever moved up the mountains, reaching places 4000 feet above the sea-level, though the visitation was not so general at that height. Three epidemics are said to have visited here since 1850, the last occurring in 1884.

The disease is epidemic, but not necessarily contagious, as those infected on the plains going to the mountains early in the epidemic did not infect their nurses. Besides, mountaineers visiting the city for a short time, without meeting any affected persons, take the disease in several days after their return home. It cannot be due to contagion, and must require certain peculiar atmospheric conditions for its spread, as whole villages are prostrated in a few days. The period of incubation seems to be from one to ten days.

The severity of the disease does not appear to depend on the condition of the person affected. In fact, muscular, healthy people have often presented the most severe symptoms of intense pain in the joints and head, and high fever.

The attack in most cases begins with a chill more or less pronounced, then fever with temperature ranging up to 105° or more. Later, the symptoms vary in different persons, pains in the knees, back or any joint, resembling rheumatism, present themselves most frequently. Others may have only headache, or intense pain in the eyes lasting from one day to a week, and accompanied with obstinate constipation and often nausea. The latter, with vomiting, may sometimes be the first symptom. Delirium occurred in several cases observed, and convulsions in some young children. Nausea and vomiting occurring late in the sickness usually terminate the severe pain and remain some time, with gaseous distention of the stomach and intestines, absence of appetite and a disagreeable, bitter taste in the mouth, the latter remaining a week or two after all other symptoms have passed.

One case was sent to the hospital, supposed to have acute gastritis, as nothing could be retained by the stomach and constipation had existed for seven days. An enema and calomel by the mouth opened the bowels, and ice with lime-water arrested the vomiting the second day. The case then developed purpura, and glandular swelling about the throat. The latter symptom occurred with many cases; the former, rarely. A scarlet rash, or papular eruption, showed itself in many cases; in others, an erythematous blush, while many had no eruption, but burning and extreme sensitiveness of the skin, and not a few were troubled with urticaria.

Treatment seems to avail little in arresting the disease, though much can be done to arrest the suffering. The French physicians here employ a cathartic and emetic together as routine treatment, and the results, though disagreeable, are good. The natives and English begin treatment with a cathartic. Quinine, after trial in a number of cases, seemed only to increase the head and stomach symptoms. Antipyrin did good in lowering the temperature, and where delirium occurred it passed away under its use, as the fever lessened. Aconite has been a favorite remedy, and patients taking a mixture of potassium acetate, syrup, and cherry-laurel water seemed to have the stomach symptoms alleviated. The various so-called fever mixtures do well, and iced soda-lemonade proved particularly refreshing. Opium to relieve the pain and chloral to produce sleep are often called for.

After the symptoms have passed away, the weakness left is out of proportion to the amount or severity of the sickness, and persists for some time. Wine, or Easton's syrup, seems to arrest it, and hasten the return of appetite.

A relapse is not infrequent, and in some cases a second has occurred. Native tradition is that it occurs on the twentieth day, and it has in many cases occurred near that time, though not often enough to establish it as a rule. Catarrhal ophthalmia occurred frequently as a sequelæ, and the cases have been particularly obstinate, not yielding to the ordinary remedies until leeches were applied, or some counter-irritant.

Elderly people and quite young children have not furnished many cases of the disease. Deaths have been rare, only occurring in those cases where complications existed or developed.

Previous visitation has not protected from the fever, save in the cases of a number of elderly people, which may also account for so few cases occurring among that class, as all those questioned stated they had it once or more times in former epidemics.

S. P. GLOVER, M.A., M.D.,
Attending Physician to the St John's Hospital, Beyrout, Syria

A Mistaken Diagnosis.—During the past summer I was called to see a colored boy, nineteen years of age, who was said to have "cholera morbus." He had been as well as usual until noon of the day on which I was summoned, when he returned from work and ate a large dinner of pork. Soon after dinner violent epigastric pain

arose, with vomiting, the vomited matter soon becoming bloody.

I found him in intense pain, which radiated over the entire belly; the abdomen was tender and tympanitic; the skin and extremities cold; the face pinched and anxious; the respiration shallow and frequent; the pulse rapid and weak. Vomiting was frequently attempted, the only result being the ejection of greenish matter streaked with blood. He complained of constipation, and of a feeling as if his bowels were "blocked up." He stated that previous to that day his bowels had been slightly loose. Temperature 98° F. I believed it to be a case of ptomaine poisoning. The stomach being empty, no emetic was used. A hypodermatic injection of morphine and atropine was at once employed, iced brandy given by the mouth; he was wrapped in blankets and surrounded by hot bottles, ordered to refrain from all food, and to take a mixture of carbolic acid, morphia, and subnitrate of bismuth. He soon grew more comfortable, and I left him.

Early the next morning the pain, which had again returned, became extremely violent, collapse set in, and he died fourteen hours after the onset of the symptoms, and before I could reach him.

The necropsy (which Dr. Coplin kindly performed) showed a hemorrhagic gastritis, violent recent peritonitis, and that the contents of the bowel had escaped into the peritoneal cavity. The perforation was found in the lower part of the ilium near the ilio-cæcal valve, and on opening the intestine was discovered to be due to ulceration of a Peyer's patch. No other patches were found ulcerated and none infiltrated. The mesenteric glands were considerably swollen, the spleen was enlarged and softened, the liver was grayish-red and fatty, and the kidneys were hyperæmic. The post-mortem examination renders it quite probable that the ulceration was typhoid. In any case an ulcer must have existed for quite a time, and perforation caused by violent vomiting. The absence of previous symptoms, and the presence of an obvious cause for the existing condition, prevented the idea of intestinal perforation in a person laboring under walking typhoid, occurring as a possible diagnosis. It is possible that the great and general abdominal tenderness and tympanites, and the previous diarrhœa, should have aroused suspicion. Dr. Coplin is engaged in making sections of the ulcer for microscopical examination, and we will soon have his report.

J. CHALMERS DA COSTA, M.D.

SURGICAL.

Subcutaneous Herniotomy.—On November 9th, Alex. L., a snow-bound railroad passenger, suddenly discovered that he was ruptured. He at once applied to Drs. Beshoar and Thompson and myself for relief. An examination revealed an oblique inguinal hernia, the tumor being probably omental, about two inches in length, and quite hard. The constriction was at the external ring, but the hernia was not strangulated. The effort at reduction by taxis was not successful, although continued for half an hour with considerable force and under chloroform. Further effort was considered useless. It was suggested that by nicking the ring subcutaneously it could be reduced. Accordingly, Dr. Beshoar introduced the tip of his index-finger within the ring, carrying with it the scrotum. A probe-pointed bistoury was passed along the finger; it was then turned, cutting through the scrotum and nicking the ring, the incision in the scrotum not being more than a quarter of an inch in length. The tumor at once returned into the abdomen. There was but a drop of blood lost. On recovery from the chloroform, a spica bandage and pad were applied. The patient then walked to his hotel, and next day resumed his journey.

N. E. CHARLTON, M.D.

TRINIDAD, COLORADO.

THERAPEUTICAL NOTES.

Pilocarpine in Night-sweats.—The various remedies brought forward at different times for this troublesome state have each in its turn proved useless in certain cases, and while agaricin may be mentioned as one of those which deserve the least praise, in our own experience small doses of pilocarpine amounting to the twentieth of a grain, given from one to two hours before the sweat is expected, are potent for good. The means by which this result is brought about are not far to seek. The drug in all doses greatly stimulates the peripheral ends of the nerves supplying the sweat-glands. In many instances we find excessive secretion dependent upon depression of function, as in a serous diarrhœa or a local sweating of the feet. These states pass away just so soon as the parts regain their normal tone through proper treatment. The night-sweats of phthisis are improved by pilocarpine because this drug in all doses stimulates the sweat-glands. In large dose this stimulation amounts to free diaphoresis; but in the minute dose such as we name, the stimulation just balances the depression, and a normal tone is acquired. While it is true that pilocarpine and atropine are physiological antagonists, it will be found practically beneficial to prescribe small doses of both in such cases as refuse to respond to either one alone, as by their antagonism they prevent overaction on other parts of the body, and both act in harmony in so influencing the sweat-glands as to be of service to the physician.

The Value of Large Doses of Hydrochloric Acid and Nitrohydrochloric Acid after an Alcoholic Debauch.—The common methods of treating the patient who comes to the physician suffering from such symptoms are very well known, particularly as they are applied to persons who for days at a time have swallowed alcoholic drinks till they are on the verge of mania-potu. Much more commonly do we see persons who, having imbibed too freely, have heavy heads, coated tongues, and sour stomachs after only one evening's carousal. Though spirit of Mindererus has been for years employed at such times, we believe that hydrochloric acid is much better. The use of large doses is an important part of the treatment, and the administration of thirty to forty drops of the officinal dilute acid is about the proper quantity. This should not be too much diluted, and half a glass of water is sufficient when it is taken through a tube. In those cases in which torpidity of the liver has existed before the "excess," or where it follows it, a large dose of the *undiluted, ruby-red, freshly mixed* nitrohydrochloric acid is the better remedy

of the two; as much as six to ten drops of the strong acid in a glass of water being given at a time, and repeated every four hours, till the symptoms are removed or bilious purging is produced.

MEDICAL PROGRESS.

The Effect of Salt upon Bacteria.—Prof. J. Forster, of Amsterdam, has recently studied the effect of salting or pickling meat upon the bacteria present. He found that cholera bacilli were soon destroyed under the influence of abundance of salt, usually in a few hours; but that typhoid bacilli, pyogenic staphylococci, the streptococci of erysipelas, and the bacilli of porcine infectious diseases frequently retained their vitality for several weeks, or even months, in spite of the presence of abundance of salt. The same was also true of the bacilli of tubercle. In some cases, these bacilli were found alive after being two months in pickle, their vitality being proved by their capacity for infecting cultures. Portions of the viscera of a tuberculous animal, preserved for a considerable time in salt, were found capable of causing tuberculosis in a healthy animal when introduced into its peritoneal cavity. Experiments on the spleen of an animal which had died of malignant anthrax showed that 7½ per cent. of salt in the organ possessed the power of destroying the bacilli of this disease in about eighteen hours. From these facts it would appear that salting or pickling has but little destructive effect on many of the more common forms of bacilli found in diseased meat.—*British Medical Journal*, October 26, 1889.

Drugs Excreted with the Milk of Nursing Mothers.—Fehling has opened an important field of inquiry by a series of experiments to determine what drugs may be safely given to nursing mothers. He found that salicylate of sodium was dangerous to the infant when given to the mother in doses of forty-five grains daily. Iodide of potassium could be safely given in doses of three grains daily. Iodoform entered the system of the infant more readily through the mother's milk than when given to the child. Even when the wounds of the mother were dressed with iodoform, iodine was found in the child's urine. He found that mercurial salts given to the mother affected the child very slightly if at all, and that twenty-five drops of tincture of opium (German Pharmacopœia) and one-tenth to three-tenths of a grain of morphia could be safely given to the mother. Chloral might be given in doses of twenty-three grains to forty-five grains. Atropine administered to the mother affected the child very quickly, even in small doses. He denies that acids have an injurious effect on the child.—*Medical Chronicle*, September, 1889.

Dry Antiseptic Operations.—Dr. Landerer, of Leipsic, has invented a dry method of operating which consists simply in not allowing a drop of fluid of any kind to come into contact with the wound during operation; irrigation is entirely dispensed with, and wet articles for sponging are discarded. The instruments are boiled, and afterward kept in weak carbolic solution. The hands are cleansed according to Fürbringer's direction, only that instead of pure alcohol a 1 : 2000 solution of sublimate in alcohol is used. The field of operation is similarly treated. After the first incision is made no more fluid is permitted to come into contact with the wound, which is sponged with pieces of sublimated absorbent gauze, and all parts are kept tamponed with it, except the point where the surgeon is working.

Hemorrhage is much lessened by this method, hardly any vessels in the muscles requiring ligation. When the operation is finished, and the larger arteries are tied, the wound is to be kept tamponed for a few minutes with gauze, after which the wound presents absolutely dry surfaces, and is in excellent condition to unite primarily. Buried sutures are used to bring the deeper portions together. No drainage-tubes are applied, but the blood is forced out of the wound by direct pressure. Even cavities may be treated in this manner (as after castration) provided the walls can be brought together. The bandages are to be applied with moderate pressure.

The advantages claimed for this method by the author are the following:

1. The patient does not get wet or chilled.

2. Hemorrhage is minimized. In cases of amputation of the breast, where the axillary glands are removed, the towel placed beneath the shoulder is not even wet.

3. No antiseptic substances are absorbed, and, therefore, no intoxication is possible.

4. The duration of operations is shortened, because there is not so much time spent in controlling hemorrhage.

5. Rapid and safe recovery. In the ninety cases of the author he never once observed a flush around the wound; the temperature never once rose above 100.4°. There is no secretion from the wound, so that only one change of dressing, to remove the stitches, is necessary. The patients are not prostrated, even after large operations.

6. The great convenience of the method. Instead of big bottles, unreliable dishes, and fluids, as are met with in country practice, well-packed gauze may be carried in a small tin or glass vessel, thus simplifying matters greatly for the general practitioner.

7. The hands of the surgeon are not injured or roughened.—*Langenbeck's Archives; Annals of Surgery*, November, 1889.

Eucalyptus in the Treatment of Whooping-cough.—Dr. Hardwicke, in a recent number of the *Lancet*, highly recommends oil of eucalyptus in the treatment of pertussis. He uses it in the form of a spray, usually combining with it terebene. The following is his formula:

Oil of eucalyptus . . .	2 drachms.
Terebene	2 "
Alcohol	1½ ounces.—M.

This is to be used, with an ordinary atomizer, four times daily. Internally he prescribes terebene and paregoric in the following mixture:

Terebene	1 drop.
Camphorated tinct. of opium	10 drops.
Carbonate of magnesium .	2 grains.
Water	1 drachm.—M.

To be taken every three hours. The carbonate of magnesium is added simply to hold the terebene in sus-

pension. In every case in which this treatment was carried out a cure was effected in about two weeks.

Ointment for Goitre.—The following is the formula of an ointment used by PROF. DA COSTA in the local treatment of goitre:

Iodine	30 grains.
Oil of juniper	5 drops.
Lanolin	1 ounce.—M.

—*College and Clinical Record*, November, 1889.

Treatment of Intertrigo.—For the treatment of intertrigo PROF. LIEBREICH recommends an ointment prepared according to the following formula:

Boric acid	1 part.
Vaseline	20 parts.
Lanolin	100 "

Before a second application of this ointment the skin should be thoroughly washed.—*Journal of Cutaneous and Genito-Urinary Diseases*, November, 1889.

Castor Oil and Chocolate Tablets.—DR. GIRARD prescribes castor oil to children in cocoa tablets, which are said to be palatable and readily taken. The following is his formula:

Powdered cocoa	50 parts.
Pulverized sugar	100 "
Castor oil	50 "

Vanilla in sufficient quantity to flavor.

This can be made into pastils of which four or five will purge a child.—*Journal de Médecine de Paris*, October 20, 1889.

Ointment for Hemorrhoids.—KOSSOBUDSKI recommends the following ointment for the treatment of external hemorrhoids:

Chrysarobin	12 grains.
Iodoform	5 "
Extract of belladonna	9 "
Vaseline	1 ounce.—M.

This should be applied several times daily, washing the parts before each application with a two per cent. carbolic solution, or a one per cent. creolin solution.

For internal hemorrhoids he uses suppositories made according to the following formula:

Chrysarobin	1½ grains.
Iodoform	⅓ grain.
Extract of belladonna	1 grain.
Cacao butter	30 grains.—M.

After two or three months' use of these suppositories, the majority of cases are cured.—*Deutsche med. Wochenschrift*, November 14, 1889.

Corrosive Sublimate in Dysentery.—CHOWDHOVRY, of India, in the *Lancet* of November 2, 1889, states that he has had greater success in the treatment of dysentery with bichloride of mercury than with ipecacuanha. The latter treatment he found unsuited to many patients, the nausea produced seriously interfering with nourishment, though small doses, three to five grains, combined with sodium bicarbonate are often useful in acute dysentery. In chronic dysentery at the Burdwan Hospital, with every variety of treatment, the mortality has remained very high. Thinking that ipecacuanha owed its power in this disease to stimulation of biliary secretion, and believing that corrosive sublimate possessed the same influence with no nauseating effects, he resolved to give it a fair trial. His expectations were fully realized and with the administration of this drug many chronic and seemingly hopeless cases were cured in a shorter time than could have been expected with any other method. The dose he administers is small, five minims of the British liquor hydrargyri perchloridi (about 1 : 100 grain of sublimate) well diluted every four hours.

The Inheritance of Tuberculosis.—To determine if the children of tuberculous parents inherit the disease or simply the predisposition, DR. SANCHEZ-TOLEDO made the following experiments:

In the first series, on fifteen pregnant guinea-pigs, 1 c.c. of the tubercular virus of Koch was injected in the jugular vein. At the end of twelve or fifteen days, the animals died with their organs filled with bacilli. Thirty-five fœtuses were removed in whose organs no traces of the germs were found. Cultures of the blood, liver, and spleen remained completely negative. Thirty-five guinea-pigs inoculated with the fœtal organs remained in good health, and when killed no trace of tubercular disease was found.

In another series, eleven pregnant guinea-pigs were inoculated by injections into the pleura, and their seventeen fœtuses gave the same negative results.

Finally, in a third series, nine pregnant guinea-pigs were inoculated under the skin, with cultures or the fresh expectorations from phthisical patients, with the same results as above.

The author deduces from these experiments that the bacillus tuberculosis rarely enters the placenta, and that in consequence direct hereditation of tuberculosis is very exceptional.

As to the rarity of the transmission compared with anthrax, chicken cholera, etc., he believes it is because the microbes of these diseases live in the blood, whilst the habitat of Koch's bacteria is the lymphatic system. —*Lyon Médicale*, October 20, 1889.

Food for Gastro-enteritis of Children.—In the *Lyon Médicale*, DR. DUJRI advises the following food in gastro-enteritis of infants:

Wheat	1 tablespoonful.
Oatmeal	½ "
Barley	½ "
Water	1 quart.

This is to be concentrated by boiling to one pint, strained, and sweetened. The result is a mucilage readily taken by children. In gastro-enteritis the patient should be given small quantities of this mucilage at frequent intervals, and no other food administered until the stools assume their normal color.

Wash for Stomatitis.—

℞.—Sod. salicyl.	ʒv.
Aq. dest.	f ʒiijss.—M.

The mouth is to be washed with this at intervals of two or three hours.—*L' Union Médicale.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

Address the Editor: H. A. HARE, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, including Postage.

PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
NOS. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, DECEMBER 7, 1889.

THE EMPLOYMENT OF ANTIFEBRIN IN RHEUMATISM.

SINCE the discovery of the anti-rheumatic powers of salicylic acid by Germain Sée, who was using the drug for the purpose of reducing the pyrexia accompanying articular rheumatism, therapeutists have sought in the realm of similar substances for a drug which would benefit those cases suffering from the poison which salicylic acid was unable to modify. To this end, salicin and many salicylates have been employed, and carbolic acid, salol, antipyrin, and phenacetin have all proved to be of but temporary value in the treatment of an affection whose pathology has so far remained a closed door in the face of the pathologist.

The studies of Guttmann with antifebrin in a very large number of cases of rheumatism, embracing all its forms, both chronic and acute, have given most encouraging results; and we have seen the drug act most happily in several cases which had refused to yield to the iodides and salicylates: all of these cases were of the severe acute form, suffering intense pain from the articular inflammation, but devoid of any cardiac complications. It at once becomes evident that a drug such as is antifebrin may do good in a case of rheumatism in three entirely separate and distinct ways, any one of which may be active at once or all active together, hand-in-hand in the improvement of the patient's state. Any substance possessing strong antipyretic power must be of value under such circumstances in the lowering of the fever which follows its administration, with the resulting quieting of an excited system, and in putting aside the delirium associated with a condition of hyperpyrexia. Not only does such a drug act favorably in this manner, but the analgesic effects of such a substance must exert a powerful influence for good. By benumbing the sensibility of the patient to the excruciating pain consequent upon movement, and so putting aside the nervous wear and tear of sleeplessness and suffering, the patient's state must improve, or, at least, not grow worse from the exhaustion of the long hours of agony. Further than this it would seem probable that antifebrin possesses a direct anti-rheumatic influence, allaying the diseased processes even in those forms where, pain being largely absent, the improvement must be real and not apparent as a result of the relief of pain and gain in sleep.

The intention of this editorial is not to extol the value of antifebrin in rheumatism to the exclusion of other means of relief, nor to recommend its use before the more thoroughly tried salicylates and iodides, but to draw to its standard a certain number of cases which persistently resist treatment of the ordinary stamp and put the physician to his wits' end for a change of treatment at least promising some chance of relief. Many of the readers of THE MEDICAL NEWS have doubtless seen just such cases, and many of them must have learnt by sad experience that acute articular rheumatism is in many cases bound to run a course of so many weeks or days, do what we will. Under these circumstances nothing acts, further than a palliative, and the patient and his friends become impatient for a change. We have found that antifebrin in such cases will often relieve the pain and so permit a refreshing sleep, in doses of from four to eight grains three times a day, and that these amounts do not cause the excessive sweating which the necessarily large doses of salicylate are sure to produce—sweats which leave the patient oftentimes almost dyspnœic from very weakness. Whether this temporary relief produces such changes in the system as to permit of a better battle against the disease, or whether it actually counteracts the rheumatic poison, we know not; but we do know that following its employment the relief is not only temporary, but often permanent, and that a very distinct step in advance is made toward the close of the attack if any influence at all is felt.

REVIEWS.

A MANUAL OF OBSTETRICS. By A. F. A. KING, A.M., M.D. Fourth edition, 12mo., pp. 432. Illustrated. Philadelphia: Lea Brothers & Co., 1889.

DR. KING, in the preface to the first edition of this manual, modestly states that its "purpose is to furnish a good groundwork for the student at the beginning of his obstetric studies," and candidly admits it to be "in great part a compilation from more elaborate text-books." Were we inclined to find fault, these admissions of the author would at once disarm us. Its purpose is attained; it *will* furnish a good groundwork to the student who carefully reads it; and further, the busy practitioner should not scorn the volume because written for students, as it contains much valuable obstetric knowledge, some of which is not found in more elaborate text-books.

The chapters on the anatomy of the female generative organs, menstruation, fecundation, the signs of pregnancy, and the diseases of pregnancy, are all excellent and clear, but it is in the description of labor, both normal and abnormal, and its management, that Dr. King is at his best. Here his style is so concise, and the illustrations are so good, that the veriest tyro could not fail to receive a clear conception of labor, its complications and treatment. Particularly to be commended are the chapters upon placenta prævia and post-partal hemorrhage. We regret that Dr. King has not seen fit to insist upon the antiseptic treatment of normal labor, though in septic conditions his descriptions of antiseptic technique are entirely satisfactory.

A most useful chapter of twenty-two pages upon the jurisprudence of midwifery closes the volume—useful because on a subject so constantly neglected in college instruction.

Of the 141 illustrations it may safely be said that they all *illustrate*, and that the engraver's work is excellent. The name of the publishers is a sufficient guarantee that the work is presented in an attractive form, and from every standpoint we can most heartily recommend the book both to practitioner and student.

THE YEAR-BOOK OF TREATMENT FOR 1889. 12mo., pp. 344. Philadelphia: Lea Brothers & Co., 1889.

WERE it possible for the average practitioner to read one-half of the contributions annually made to the art of medicine, there might be no absolute necessity for such a volume as the one before us; but valuable articles are so numerous, and scattered through so many journals, that those of us who would keep pace with progress are compelled to resort to abstracts and compilations. Among such works, one of the most familiar is the *Year-Book*. Contributed to by Sir Dyce Duckworth, J. Mitchell Bruce, James Frederick Goodhart, Reginald Harrison, D. Berry Hart, Malcolm Morris, Frederick Treves, and others, it has won for itself, in other years, a well-deserved reputation which the number for 1889 sustains. All the important advances in therapeutics in every department of medicine are here found in the form of concise abstracts, usually with the suggestive comments or criticisms of the contributor. These comments by recognized authorities raise the book far above the level of a compilation, and add greatly to its value. To every practitioner of medicine the *Year-Book* offers valuable assistance, and to those of us far removed from the medical libraries and societies of a large city it becomes a necessity. Not the least important feature is the excellence of the index, which is most carefully prepared. From every standpoint we can heartily recommend the book to the practitioner of medicine, general or special.

CORRESPONDENCE.

LOUISVILLE.

(*From our Special Correspondent.*)

To the Editor of THE MEDICAL NEWS,

SIR: So far as the number of matriculates in medicine is concerned, Louisville ranks third as a medical centre among the cities of the Union. Carefully compiled statistics of the Illinois State Board of Health show that in the year 1887–88 New York State had 2309 matriculates, including regulars, homœopathists, and eclectics; Pennsylvania, 1267; while Louisville, the only city in the State of Kentucky containing medical schools, had 793 students enrolled in her colleges, all of whom belonged to the regular school. Since these statistics were published, another school has sprung into existence which presents anomalous features, and is, I believe, the only one of its kind in this country. It is a "regular" school of medicine, with a charter prescribing a minimum course of instruction, and giving the Faculty a right to confer the degree of Doctor of Medicine. The anomalous feature is the fact that the Faculty is composed of both whites and negroes, while the students are entirely of the latter class. What the requirements are for admission, or the number of matriculates, or the thoroughness of the course of instruction, your correspondent is unable to discover. It is reported that degrees are obtained with a celerity that would astonish even our older physicians accustomed to the "two years of five months each." Beside this experiment, there are four other schools, two summer and two winter, all of which are prosperous. A few years ago there was much rivalry between the various medical teaching bodies of this city, and charges of cut-rates, fraudulent matriculation, and unfair advertising, not to speak of still more severe accusations, were brought by the several schools against each other. Hospital appointments were the chief "bone of contention." As there is but one public hospital here, containing about 300 beds, in the past it was the custom of the school having the largest number of resident physicians appointed to this hospital, to utilize this fact as an evidence of its superiority over its fellows. Fortunately, the purely commercial spirit has largely given away to scientific zeal and a striving to keep pace with the requirements which the medical advancement of the last decade has made. The oldest of the schools, and one enjoying great prestige, is the medical school of the University of Louisville. Its importance as a factor in the development of medical teaching throughout the United States is not sufficiently appreciated. Comparatively few of the readers of THE MEDICAL NEWS know that as far back as 1848 Samuel D. Gross occupied the Chair of Surgery, and that in 1850 he resigned from the University of New York to return again to Louisville as a member of its

Faculty. In 1852 Austin Flint was appointed to the Chair of Practice of Medicine, and in 1847 Benjamin Silliman was elected Professor of Chemistry. Dr. Lunsford P. Yandell, who was widely known through the South, was connected with the school from its inception in 1837. In 1859 he was succeeded by his son, Dr. David E. Yandell. Dr. Theophilus Parvin, and Dr. James W. Holland, now of the Jefferson Medical College, have both occupied chairs in the school. Philadelphia contributed more to the successful founding of the first medical school in Kentucky than is generally known. In 1819 the Medical Department of Transylvania University was founded at Lexington by Dr. Charles Caldwell, a graduate of the University of Pennsylvania. The school grew apace, and in 1825 the classes numbered but little short of 300. Owing to the more rapid growth of Louisville and Cincinnati, the school was removed from Lexington to Louisville, where it was called "The Medical Institute," and afterward "The Medical Department of the University of Louisville." In 1847 this school had no less than 343 students enrolled upon its list, and in 1848 the number had increased to 406. At that time the college was matriculating a greater number than any other school in the Union, excepting the two in Philadelphia. As a result of the War, no lectures were delivered in 1862 and 1863, but since then the classes have grown steadily, and now number 350 matriculates. This school has established a laboratory of bacteriology, but, unfortunately, the shortness of its required course will prevent it from ranking with the foreign schools where a classical education is a requisite for admission, and where the course numbers almost as many years as we number months. In order to comply with the law which has just been passed in several States, in regard to the preliminary education for the study of medicine, the Faculty have arranged for the examination of all persons intending to practise medicine, granting a certificate of preliminary training to those who pass the required standard.

Were it not that this letter has already become too long, notes of interest concerning other schools of Louisville would be included, and another letter containing them will shortly be sent for publication.

BALTIMORE.

(*From our Special Correspondent.*)

To the Editor of THE MEDICAL NEWS,

SIR: The Medical and Chirurgical Faculty of Maryland, a society hoary with age, whose founders were among the leaders of medical and social progress a century ago, has taken a new lease of life and begun to shape itself after the State medical societies of neighboring States. To this end it has reduced its fees, and has determined to hold semi-annual meetings, one in Baltimore, as heretofore, and one in a selected town or city of the State. The first of these "out-meetings" took place a few days ago, in Hagerstown. A number of physicians of Baltimore attended, and very considerable interest was shown by the professional men of Hagerstown and adjacent districts. One of the papers read, on typhoid fever, gave the resident brethren an opportunity to show that they knew a thing or two about the disease, and their remarks showed that in knowledge of this subject they equalled, and in practical experience probably surpassed, many of their guests. The discussions of abdominal surgery showed that the surgeons of the counties are not behindhand in this field of operative work. The city members returned greatly impressed with the courtesy of their hosts, and with the desirableness of such reunions of the practitioners of the State.

At the Hagerstown session a movement was set on foot to secure a non-political State Examining Board. A law was passed by our last Legislature, appointing the State Board of Health a medical examining board, with powers limited to the examination of such practitioners as did not possess some sort of diploma. It was accepted by us as "better than nothing." As no appropriation was made to enable the Board of Health to buy postage stamps, bill-heads, etc., for its new work, quackery has continued to luxuriate as formerly in the rich pastures which Maryland affords. As the Board of Health is appointed through political influence, and is, therefore, afraid of hurting the feelings of the unclean, ignorant, or selfish among its constituents, the desire of physicians is now to have a special "examining board" appointed from a number of medical men nominated by the medical societies, due provision being made for the examination of homœopathists, etc.

We have two large new hospitals: the Johns Hopkins, which was formally opened a short time ago, and the Hospital of the Sisters of Mercy, which will soon be ready for occupation. The Johns Hopkins Hospital, situated in a beautiful square, possessing one of the finest outlooks in the city, representing in its internal construction the very latest ideas in sanitary science, and manned by a corps of distinguished scientific and practical men, has already attracted to its wards numbers of most interesting cases, the material exceeding in point of clinical interest the utmost expectation of the professors. Here each professor, with his group of special students about him, studies the phenomena of disease with an accuracy bred of careful training, and with an armamentarium complete in every necessary particular.

The Hospital of the Sisters of Mercy is a fine building situated next to the College of Physicians and Surgeons, presenting, in so far as means would permit, the modern improvements so elaborately and expensively worked out in the Johns Hopkins Hospital. It is to be hoped that the old custom of the Sisters of Mercy, of appointing convalescents and common servants to nurse the sick, will give place to the employment of trained nurses for this purpose. The Faculty of the College of Physicians and Surgeons has exclusive medical control over this hospital, which will have accommodations for 300 patients, and doubtless will receive most of the accident cases from the business centres of the city.

An announcement has just been made that post-graduate clinical courses may be expected during the present winter at the Johns Hopkins Hospital, which will be open to a limited number of physicians. Prof. Osler will give his class the privilege of visiting his wards daily in his company, and learning under his direction the most approved methods of case-taking and of diagnosis and treatment of disease, and will study with them select cases from his dispensary service. Special courses will be given in laryngology by Dr. Mackenzie; in diseases of children, by Drs. Osler and Booker; and in diseases of the nervous system and electro-therapeutics, by Drs.

Osler and Thomas. Laboratory courses in clinical microscopy and urinology will be given by Dr. Lafleur, and lectures will be delivered, in January, on phthisis, and in February, on practical cerebral localization. Opportunities will also be afforded for the working out of special lines in medicine and therapeutics by advanced students.

A limited number of physicians will be admitted to Dr. Halstead's bedside clinics, and to his private operating-room. He will deliver didactic lectures on antiseptic surgery, and clinical lectures on surgical tuberculosis, intestinal suture, and transfusion. Practical work may be done in the dispensary in general surgery, genito-urinary surgery, diseases of the skin, and diseases of the eye and ear.

The privilege of observing Dr. Kelly's operations in gynecology in his private operating-room will be extended to a few selected graduates in medicine.

Practical courses in hygiene, under the direction of Drs. Billings and Abbott, will extend over three months, beginning in March, 1890. Among the subjects studied will be the physical, chemical, and bacteriological conditions of air and water; the nature and action of ferments and disease germs; the methods of sterilization and disinfection.

A post-graduate lecture course will be given by Dr. Hurd on psychiatry.

The pathological laboratories, under the charge of Drs. Welch and Councilman, have been in operation for some time, opportunies being offered for both elementary and original work. Special attention is given in them to bacteriology.

Graduates of medicine may obtain all the above advantages for $100. The fee for all courses in any one department is $50; for a single special course, $25.

CINCINNATI.

(*From our Special Correspondent.*)

To the Editor of The Medical News,

Sir: Ten years ago laparotomy in Cincinnati was so fatal as to be approached with dismal foreboding, and the operation was never performed without the utmost antiseptic precautions or complete Listerism. To-day it has become common and is attended with an exceedingly low rate of mortality. Then, it was practised only in private or before a selected few who received with their invitations a request to be particularly careful as to their toilet that morning; now, it is practised in the public amphitheatres without special restriction and with only ordinary care as to cleanliness and moderate antisepsis.

Including laparotomies for all purposes, the operation has been performed in this city more than twenty times within the last month.

Dr. Thaddeus A. Reamy heads the list with twelve operations. Of these, three were performed in the amphitheatre of the Good Samaritan Hospital in the presence of the class of the Medical College of Ohio, six in Dr. Reamy's private hospital, and three in his private practice. Of the three performed at the Good Samaritan Hospital, one was for the removal of double intra-ligamentous cysts of the broad ligaments, one for pyo-salpinx, and one for hydro-salpinx. Of the cases operated upon in his private hospital two were pyo-salpinx, one a cyst of the broad ligament, one a hydro-salpinx, and two fibro-cystic tumors of the uterus. Of those in his private practice, one was for the removal of a small ovarian cyst, and two were for disease of the tubes and ovaries; one of the latter, the removal of a fibro-cystic tumor, proved fatal. All the other cases were successful.

Dr. P. S. Conner has had a successful operation for gunshot wound of the intestine. Two bullet wounds had been received, one ball entering about an inch to the right of and slightly below the umbilicus, the other about an inch to the left of the ensiform cartilage. Only the former, however, caused any damage. Nine perforations of the intestine were repaired, the operation being performed twelve hours after the receipt of the wounds. Recovery was prompt and complete.

On November 12th Dr. Conner sewed up ten wounds of the intestine four hours after the receipt of a pistol-shot wound. Considerable hemorrhage had taken place into the pelvis, the blood coming from a wounded vessel outside of the peritoneum, the location of which could not be determined. No hemorrhage of moment occurred after the operation, but the patient (a woman) died from the loss of blood shortly after its completion.

Three cases of ovarian tumor have proved to be cystic sarcomata. Two were operated upon by Dr. C. A. L. Reed, and one by Dr. George E. Jones. Strange to say, removal of as much of the tumor as could be taken away was in each instance followed by seemingly complete recovery, now of two weeks duration in the most recent case.

Drs. C. D. Palmer and E. G. Zinke have each performed two operations, the particulars of which I have not been able to obtain.

At least two exploratory laparotomies have been made. One of these, by Dr. E. W. Walker, at St. Mary's Hospital, was for intestinal strangulation. An extremely hard annular constriction of the bowel was found at the junction of the sigmoid flexure with the rectum, but as the patient was *in extremis* further procedure was abandoned. Microscopic examination of the specimen obtained at the autopsy revealed an extremely dense adeno-fibroma surrounding the bowel and completely closing it. The case was one of especial interest from the almost total absence of previous symptoms. The patient, a professional ball-player, aged twenty-three, of excellent physique, had no recollection of any previous illness until two or three weeks before the fatal occlusion. At that time he suffered from constipation of about a week's duration, but was relieved by a cathartic. No syphilitic taint could be discovered. The location of the stricture was determined by the attending physician, Dr. J. L. Cleveland, before the exploratory incision was made.

"Women, wind, and water penetrate everywhere," but as yet the female members of the medical profession are not represented in any of our college faculties. *Apropos* of this statement I may say that a movement is being made by prominent Presbyterian women and a few of their professional friends to found a new hospital for women and children, and to have connected with it a college "for the education of lady physicians." We have already a Woman's Medical College, fairly prosperous, although not overburdened with students, and there

is no crying need for another; but, with the exception of the clinical department, the faculty of this school is wholly masculine.

The medical profession of Cincinnati is infested with all sorts of parasites. Probably the most diabolical of the fungi is the so-called Vitapathic College, an institution chartered by the State, which for many years has continued to graduate men and women after a few weeks of alleged study and a fee, licensing them to solemnize marriage, perform the functions of a minister of the gospel, and practise the healing art. A graduate of this institution recently called to treat a case of cancer of the stomach, as diagnosticated by a leading surgeon, discovered that the patient was suffering from the invasion of that viscus by a lizard, and immediately began a course of emetics. The sufferings of the patient were promptly arrested, but the health officer refused to accept the certificate of death as prepared by the learned vitapath and the coroner was called to investigate the case. It is thought, however, that there is no law by which the culprit can be held liable, for although he is reported as having admitted that he received his diploma within one month after entering the "college," he is known to have practised ten years in this, the most gullible of all communities.

A recent decision by the Board of Public Affairs gives to the University of Cincinnati the right to erect buildings for educational purposes in Burnet Woods, one of the largest and handsomest of our parks. The University Board propose to bring the institution up to a point of excellence which will rival all other American schools. A suitable building is to be dedicated to the medical department, which will be richly endowed. Dr. J. C. Culbertson, editor of the *Lancet-Clinic*, is at present the life and soul of the University Board, and the probabilities are that, unless he is hampered by an unlooked-for financial shortage, he will not rest until he has established a medical college that is not only fully equipped, but one that will prove a formidable rival of the existing medical colleges of the South and West. The question which is agitating the profession is: Will the now prosperous colleges voluntarily surrender to the University and be absorbed as its medical department, or will they more slowly succumb to the inevitable death which is predicted for them should the University be successful in its project?

NEWS ITEMS.

Johns Hopkins Medical Society.—At the Johns Hopkins University a society of medical students has been organized on the plan of those in Berlin, the object being to bring the men of the various departments into closer connection, to stimulate original research, and to protect the claims of priority of work done by the members.

Medico-Legal Society of New York.—The November meeting of the Medico-Legal Society was held on November 20th, at the Hotel Buckingham. Clark Bell, the president, occupied the chair. The following corresponding members were elected: Dr. Joseph Morhman, of Toronto; Martha J. Lamb, of New York; Dr. C. Spadaro, of Bari, Italy; Dr. William M. McArthur, of Brooklyn; Dr. H. A. Bulloph, of Short Hills, N. J.; Professor Philippo Serafini, University of Pisa, Italy. A paper entitled "The Pathology of Death by Electricity," was read by Dr. P. E. Donlin, and another on "Life Insurance," written by Daniel Jordan, of New Brunswick, was read by the secretary. Arrangements were made for the annual dinner of the Society on Dec. 18th.

The Coronership of Queens County, New York.—Dr. Edwin A. Goodridge, of Flushing, failed to be elected one of the coroners of his county, but he may yet be successful through legal proceedings. A plurality of votes were cast for him, but his name was printed Goodrich upon the ballots. Dr. Goodridge is said to have been made a candidate without his consent.

Dr. Ricord's Record.—At the time of his decease, October 22d, Dr. Phillippe Ricord was the senior member of the Academy of Medicine, having been introduced forty years ago. The number of his decorations was not less than two hundred, an enormous number for a medical man to accumulate. Less than a month before his death he was still in practice, in a manner quite active for a man approaching his ninetieth birthday. Ricord was disinclined to the pen, but as a wit and attractive lecturer he made a memorable name and record.

The Middleton-Goldsmith Lecture.—Professor William Pepper, Provost of the University of Pennsylvania, will deliver the Middleton-Goldsmith Lecture before the New York Pathological Society, in the hall of the New York Academy of Medicine, on Wednesday evening, January 15, 1890. The subject of the lecture will be "Hepatic Fever."

Bacteriology Illustrated.—Dr. George M. Sternberg, of the Army, has been appointed to deliver a lecture before the Brooklyn Institute, on the 26th inst. He has selected for his subject "The Methods of Research in Bacteriology," to be illustrated by living forms of bacterial life thrown upon the screen.

Death from Glanders.—Dr. Hoffman, a pathologist in the General Hospital, Vienna, while making some experimental studies with the virus of glanders, gave himself a hypodermatic injection of morphia for a slight attack of muscular rheumatism. The syringe was one which had previously been used for the inoculations of cultures of the glanders bacillus, and, as might have been foreseen, Dr. Hoffman died in a few weeks from the disease.

Vacancies in the Medical Department of the Navy.—Surgeon-General Brown, of the Navy, has recently made his annual report to the Secretary of the Department. From it we glean the following facts concerning the condition of the medical arm of that service:

Vacancies in the Medical Corps: The Bureau called attention in its annual report of last year to the eleven vacancies then existing in the Medical Corps, and stated that a bill for the improvement of the condition of Assistant Surgeons, in rank and pay, had received the recommendation of the Department, and had been presented to Congress, with no near prospect of a successful issue.

On April 1st the Medical Examining Board was convened at the Naval Hospital, Brooklyn, its present loca-

tion. Since March 1, 1880, the Board, except for a few weeks during the summer, has been continuously in session at the Naval Hospital, Philadelphia, without the desired success in obtaining enough qualified young gentlemen to fill the vacancies.

As the graduates of the medical schools of the Pacific Coast, by distance and cost of transportation, were practically prevented from appearing before the Medical Examining Board, and as it seemed desirable to have in the future some members of the Corps who were citizens of the Pacific States for duty at home and on the Pacific and Asiatic stations, in the furtherance of availibility and economy a Medical Examining Board was constituted at the Naval Hospital, Mare Island, California. Notice was given to the deans of the chief medical colleges, and published in the principal medical journals, of the vacancies existing, and of the presence of the Boards at New York and Mare Island.

In addition to the eleven vacancies existing October 25, 1888, six more occurred during the year, four by death and two by retirement. The transference of the Medical Examining Board from Philadelphia to New York, and the establishment of another Board at Mare Island, has been attended with gratifying results; without lowering the standard of proficiency in the examination, a greater number of candidates have presented themselves, and twelve have passed the examination.

At present there are eight vacancies, and the Bureau has reason to hope that these vacancies will be filled at no very distant day. The Boards have been continued in their particular localities for another term.

New York County Medical Society.—At a meeting of the New York County Medical Society, on November 25, 1889, the following committees were appointed: On Ethics—Drs. E. L. Partridge, Henry E. Crampton, O. B. Douglas, A. M. Jacobus, and E. S. Leck. On Hygiene—Drs. Simon Baruch, R. C. M. Page, J. H. Emerson, Cyrus Edson, and Henry D. Chopin. On the Prize Essay—Drs. L. Bolton Bangs, E. H. Grandin, and Andrew F. Currier. Auditing Committee—Drs. William Stevens and Robert M. Fuller.

Drs. Julius Althaus, of No. 36 Bryanston Square, London, England, M.D. Berlin, Senior Physician of the London Hospital for Nervous Diseases, and Henry Morris, Surgeon of the Middlesex Hospital, England, were elected honorary, and Drs. James C. Edgar, Robert H. Wylie, John A. Fordyce, William H. Nammack, William L. Stowell, and William L. Russell, active members.

Dr. Malcom McLean read a paper on "Conservatism in Gynecology and Obstetrics," which was listened to with much interest, and afterward discussed.

Epilepsy and Mania in a Medical Student.—Dr. Henry C. Cooper, of the New York University Medical College, caused the arrest, November 6th, of a student named Allen, for examination in regard to his mental condition. If the report is true, as given in one of the New York papers, the case of Allen may be set down as one of the most unusual manifestations to be found in the history of epilepsy. The paper reports Dr. Cooper as follows: "This case is a very depressing one, but I will give a brief outline of the facts for publication. Allen first came to the University College in 1878 as a medical student. He soon developed symptoms of epilepsy, and had numerous fits in the College buildings. His general mode o action and study was so peculiar that we persuaded him to abandon the idea of becoming a physician, as he was unfitted in every way for the medical profession. He still contiued to frequent the College, however, and we tolerated his presence, looking upon him as a peculiar, but harmless, individual. Last Thursday he came as usual, and went to the dissecting-room. Six students were at work upon a negro subject, and he watched their operations. Suddenly Allen picked up a loose piece of the fascia, walked to a seat a few yards away, sat down, and slowly and deliberately devoured it. The students in the room were horrified, and reported the case to me the following day. I deemed it my duty to lay the facts before the Faculty, and we came to the conclusion that poor Allen had become afflicted with a mania which might render him a dangerous man to be at large. Accordingly, we took measures to have him examined mentally." The doctor declined to express an opinion as to the form of mania afflicting Allen. He said, however, that he believed it an almost unprecedented case in this country.

New Jersey Sanitary Association.—The New Jersey Sanitary Association met in the State House, Trenton, on November 22d and 23d. The officers were Dr. Dowling Benjamin, of Camden, President, and Dr. D. C. English, of New Brunswick, Secretary. Papers were read on the following subjects: "The East Orange Sewage Disposal Works," by C. P. Bassett, C. E.; "The Passaic River Drainage," by G. W. Howell, C. E.; "The Improvement of Sanitary Conditions in the Health and Pleasure Resorts of New Jersey," by Dr. Henry Mitchell; "The Climatic Treatment of Gastro-intestinal Diseases in Children," by Dr. Boardman Reed; "The Need of Medical Officers in School Districts," by Dr. G. F. Wilbur; "Physical Culture in the Schools in Its Hygienic Bearings," by Prof. James M. Green; "The Relation of Conduits to the Healthfulness of Water," by Dr. W. K. Newton; "Tuberculosis," and "Typhoid Fever in Munich," by Prof. S. G. Dixon, of the University of Pennsylvania; "The Present Special Sanitary Needs of Our Cities," by James C. Bayles, formerly President of the New York City Board of Health. The annual address by the President was on "The Thermometry of Hygiene."

Obituary.—Dr. William Wilson, who died suddenly, November 16th, in a New York City police station, from heart disease, was a prominent citizen and official of Ottawa, Canada. He was a graduate in medicine and law, and had brought his daughter to New York in order to gratify her choice of entering upon the life-work of a trained nurse. Dr. Wilson had been for several years the chief law clerk of the Dominion House of Commons.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, DECEMBER 14, 1889. NO. 24.

ORIGINAL LECTURES.

TUMORS OF THE FEMALE BREAST.

A Clinical Lecture

BY J. WILLIAM WHITE, M.D.,

PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA.

THE extreme frequency of tumors of the kind that I intend presently to show you renders the subject one of great interest, not only to the surgeon, but also to the practitioner, who usually is responsible for the early recognition of the growth, and upon whose advice, if he does not care to operate himself, the patient seeks the aid of the surgeon. Some preliminary remarks upon the anatomy of the gland may aid us in systematizing the general subject of the diagnosis of these growths. The mammæ are compound racemose glands, made up of fifteen or twenty lobes, each with its principal excretory duct, which empties into a sac at the base of the nipple, and contracts again into a tube which is continued to and ends upon the summit of the nipple. Each of these lobes is made up of a number of lobules, each lobule in its turn being composed of a number of gland acini or vesicles held together by connective tissue. The mammæ rest upon the great pectoral muscles to the sheaths of which they are loosely connected by delicate fibrous tissue. They are richly supplied with blood and with nerves, are surrounded by an adipose layer, and are covered anteriorly by skin.

For clinical purposes, we may regard the gland as made up essentially of connective tissue, and of an epithelial or secreting structure. Simplifying the anatomy in this way, we may also, to a large extent, simplify the pathology, following the excellent classification of Mr. Mitchell Banks. By doing this, we can divide the new growths which infect the mammæ, as follows :

First. Tumors derived from connective tissue, and representing it in a fully developed state. These neoplasms are innocent and include the varieties known as lipoma, fibroma, myxoma, and chondroma.

Second. Tumors derived from hypertrophy of highly organized structures—neuroma and angeioma.

Third. Tumors derived from the epithelial or secreting structure and maintaining the general type of the latter. These tumors are either innocent or are on the border-line between benign and malignant disease. They include the adenomata, the adeno-fibromata, the adeno-cystomata, and the adeno-sarcomata.

Fourth. Tumors, derived from the connective tissue, but instead of presenting it in a fully developed or mature state, having it in an embryonic or immature condition. These neoplasms are malignant and include the large class of sarcomata.

Fifth. Tumors derived from the epithelial or secreting structures, but with those elements or structures atypical. These are, of course, malignant, and include the class of carcinomata.

Lipomata of the breast are exceedingly infrequent The growth is situated usually between the skin of the breast and the breast itself, consisting of a superficial, slowly growing mass, having the characteristic doughy feeling and becoming dimpled upon the surface if the skin over it is compressed. It is, of course, perfectly innocent and can with safety be enucleated.

The *fibromata* occur with somewhat greater frequency, and are among the growths most often mistaken for carcinomata. The important points of differential diagnosis are as follows: Fibromata rarely exceed in size the dimensions of a walnut, and are sometimes no larger than a hickory-nut; they appear early in life—may occur, indeed, shortly after puberty; they have no tendency to infiltrate the skin or the surrounding parts; they grow very slowly; pain is not common; there is no secondary involvement of the lymph glands; they never affect the general health (except as they may influence nutrition through the fear of the patient that she has cancerous disease); if removed, they rarely or never recur. In other words, they are innocent growths, which are to be distinguished by their occurrence at an early age and by the absence of the characteristic symptoms of carcinoma, which is the neoplasm they most closely resemble.

The *myxomata* begin in the connective tissue uniting the various ducts and lobules of the gland, which tissue tends to revert to its original condition, and to become transformed into a jelly-like, translucent substance. They grow to a moderate size, affect the skin sometimes as does carcinoma, and usually cannot be diagnosticated with absolute certainty without an exploratory puncture. A tendency to recurrence is said to have been observed in these growths, and it is, therefore, advised by high authorities, that when the diagnosis of myxoma has been assured the entire gland should be removed.

Chondromata, *angeiomata*, and *neuromata* have the well-known characters of these growths, when they occur in the mammary gland, as when they occur elsewhere. They may easily, therefore, be recognized, but are so exceedingly uncommon, as to be classed rather as surgical curiosities, than as growths likely to fall under the attention of the general practitioner.

The third class is a complex one and presents the greatest difficulties both as to pathology and clinical differentiation. Running over it rapidly we may say that pure *adenomata* are of the most extreme rarity. One might practise surgery for many years without meeting with a growth of this character. They are composed of fully developed glandular tissue. They have two peculiarities which make them more serious than might be supposed from the place which they occupy in the pathological series, viz., they are apt to recur after removal and they tend to become transformed into carcinoma, by breaking-down of the basement membrane of the vesicles permitting an infiltration of epithelial elements into the surrounding connective tissue. Clini-

cally they are small, hard, painless, nodulated tumors, freely movable, of slow growth, and apt to affect middle-aged married women who have suckled a number of children. The *adeno-fibromata* are much more common, and, indeed, are said to occur with more frequency than any other non-malignant tumor of the breast. They appear at an earlier period of life than does carcinoma, are hard, nodular, movable tumors, and are altogether without the characteristic signs of malignancy. They cannot be distinguished clinically from the pure fibromata. The *adeno-cystomata* are growths of greater or less density, often attaining a large size, and consisting at first of numerous walled cavities into which there is apt to occur an intracystic growth, which often quite fills them. They grow slowly, reach a large size, affect middle-aged women, and sometimes involve the skin, not by infiltration but by pressure.

The *adeno-sarcomata* are distinctly malignant, and differ but little from the pure sarcomata, the diagnosis usually depending upon the microscopic examination after removal.

Turning now to the characteristics of the tumors which belong to our fourth class, or those of *sarcomata*, it may be said that when we meet with a painless, elastic or semi-fluctuating tumor, having a tendency to infiltrate, to grow steadily and rapidly without becoming adherent to the skin or the chest-wall, which occurs in a person from twenty-five to thirty-five years of age, which is not accompanied by any enlargement of the axillary or other lymphatics, and in which the veins are enlarged over the surface of the growth, the diagnosis of sarcoma may be considered to be reasonably well assured.

The most interesting and important class of cases remains to be described, viz., *the carcinomata*, constituting about eighty per cent. of all breast growths. Occurring with enormous frequency and attended with almost unvarying fatality, these tumors are certain to come under the observation of every practitioner. Their well-known and easily recognized peculiarities may be summed up as follows: 1. The patient is past middle age, usually past the climacteric. The disease is associated with the involution, the disuse and atrophy of the gland, not with its evolution. 2. The tumor contracts adhesions as it grows, drawing upon the connective tissue about it (causing puckering of the skin), and upon the milk ducts (causing retraction of the nipple). 3. It infiltrates the surrounding structures, the skin above and the muscles beneath. 4. It spreads to distant parts early in its development by means of the lymphatics, the nearest glands becoming indurated and progressively enlarged.

These are the four characteristic signs of the variety of cancer known as scirrhus, the encephaloid differing in consistency and size, being usually much softer and larger. Other valuable symptoms are shooting pains, general cachexia, ulceration, chronic eczema or nodular growths in the skin, or sero-sanguinolent discharge from the nipple.

I have now run over the main diagnostic points which will enable you to recognize and classify satisfactorily the various neoplasms of the breast which may present themselves to you. The inflammatory conditions of the breast which may simulate new growths are chiefly *chronic induration of a lobule* and *cold encysted abscess*, both of which are apt to be associated with lactation. The former may sometimes be recognized by its ill-defined margins, its tenderness on pressure, and by the fact that several lobules or even both breasts are not infrequently affected. The latter, in addition to these symptoms, is often accompanied by some œdema of the skin.

Glandular or *retention cysts*, *serous cysts*, and *hydatid cysts* may be known by their fluctuation, but are sometimes so tense as to be of stony hardness. An aspirating needle will reveal the character of the growth, the fluid in the retention cysts being usually dark and bloody, in serous cysts clear and albuminous. The presence of hooklets would, of course, establish the diagnosis of hydatids.

Supra- and *sub-mammary abscess* and *galactocele*, or *milk cyst*, have an almost constant association with pregnancy or lactation, sometimes with a recent traumatism superadded, or with the sudden cessation of discharge from the nipple. The diagnosis is usually not difficult, and is based upon the history and the presence of inflammatory or retention symptoms.

You will find that your difficulties in diagnosis among all the various growths and enlargements affecting the female breast will be greatest with the tumors of small size, seen soon after their appearance. There is, of course, a period in the life-history of each tumor, however serious it may be, when it is small and movable and painless, when surrounding structures and neighboring glands are not involved, and when your opinion will perforce be more largely influenced by the age of the patient, her personal and family history, the presence or absence of lactation, etc., than by the physical characteristics of the growth itself. If, on the contrary, one or two years have elapsed since its appearance, and it still retains the above-mentioned features, it is safe to say that there is but little likelihood of malignancy.

When, as in the case of the patient whom I now show you, a young woman, aged twenty-five, presents herself with a small, painless, solid growth stationary for a year, freely movable, and with no symptoms of malignancy, what is your duty toward her? You may decide that there is a high degree of probability that you are dealing with a fibroma, or an adeno-fibroma, which would perhaps be harmless if left undisturbed, but there are other and important factors to be considered. You will constantly find in such cases that the patient is profoundly worried and distressed, that her pleasure is destroyed, her sleep broken, her nutrition affected by the presence of this growth. She is certain to have known, or, at least, to have known of, some one who has died of a breast cancer which in the beginning more or less closely resembled the swelling in her own breast. These constitute in themselves, in my opinion, good reasons for operation in the large majority of such cases. Then, too, we must, as I have said, frankly admit, that in the early stage of all growths there will be very considerable doubt in the mind of even the most experienced surgeon as to the ultimate outcome of any particular case. While the age of the patient, the absence of any family history of cancer and of any sign of that disease, may make its later appearance extremely improbable, it cannot be denied that there are many instances in which a too favorable opinion given at first has to be modified as the

disease progresses, and in these cases both patient and surgeon are apt to feel that possibly a chance has been lost of which advantage might have been taken. Nor should the undoubted possibility of the transformation of an innocent into a recurrent and truly malignant growth be lost sight of.

For these reasons it is my custom to advise operation in such cases whenever the general health of the patient is reasonably good. It is not necessary at this time to sacrifice the entire gland. We are dealing with a growth which probably belongs to one of our first two classes, or to one of the innocent varieties included in our third class, and has no tendency to return. We will probably find it encapsuled and will recognize that there has been no infiltration of surrounding structures. We can, therefore, spare the patient the unnecessary mutilation of an excision of the entire mamma. A careful microscopical examination shall at once be made, and if then there prove to be any distinct tendency to malignancy, a second operation, having for its object the removal of the whole gland and the cleaning out of the axilla, will be recommended. This should be understood by the patient, who will ordinarily, as in this case, willingly acquiesce, appreciating your desire to perform the least serious operation that will make her safe. The method of withdrawing a portion of the growth by an augur-like arrangement, recently suggested, has not been found satisfactory, as the very growths in which it would be of the most use, viz., those on the border-line between innocency and malignancy, are just those which present the greatest difficulties of microscopical diagnosis, and in which more complete sections are, therefore, necessary.

Under our present antiseptic methods, union by first intention ought to be the almost invariable rule in all these cases, and the operation for excision of a movable growth of moderate size should be without shock, pain, or risk of any sort.[1]

In approaching the second case which I have to present to you we find a woman, past middle life, with a tumor having all the characteristics of carcinoma, of moderate size, the skin slightly infiltrated and the axillary glands somewhat involved. In such cases, in all the undoubtedly malignant tumors—and especially in dealing with the carcinomata—the duty of the surgeon is, to my mind, perfectly clear. I have not now the time to give you my reasons in detail for all the opinions I am expressing to you, but must ask you to believe that they are founded on an experience which has been exceptionally large, thanks to my relations with Professor Agnew. I have had with him, in addition to my own experience, the opportunity of assisting at the operations upon and participating in the after-treatment of what may fairly be called an enormous number of these cases, and have watched their progress from first to last. The diagnosis of malignancy having been established, there are always certain questions in regard to prognosis which the surgeon will at once have to answer, either to the patient or her friends—and there are certain facts which, with or without questioning, it is his duty to lay before some intelligent member of the family.

In the first place, it should be clearly understood that the disease is, with or without operation, almost necessarily a fatal one. A careful study of recorded cases, in which a claim of cure has been made, will show that in many the diagnosis was not confirmed by microscopical examination, and that in more the report of "cure" was made at a period of twelve, eighteen, or twenty-four months after the operation. It is certainly unsafe in giving your prognosis to do more than express the hope that the case in question may prove to be one of the extremely rare ones in which the patient enjoys good health for many years—sometimes long enough to die of something else. This explanation will usually be followed by inquiries as to the probable duration of life, if the patient is not operated upon. In reply to this, it may be said, that according to the best authorities, the average length of life in cases of scirrhus, dating from the time of its first discovery, is about two years and a half.

Sibley places this period at a little over thirty-two months, Baker at forty-three months, and others at different dates, the time which I have mentioned—namely, two years and a half—being, however, about the average. Agnew says the shortest period at which he has seen death result from untreated carcinoma is six months, and the longest nine years. If the cancer is encephaloid, it is likely to progress more rapidly and to bring about an earlier fatal termination, the average duration of life in these cases being under a year (Jacobson). The next question will probably be: What is the probable duration of life after such an operation as is contemplated? To this it may be replied, that if the case is recognized early and the operation is promptly assented to, it may be said to increase the chance of life by at least a year, possibly by a year and a half, bringing it up to from three and a half to four years. If the discovery of the disease and the operation are later, the result will not be so good, the average date of recurrence after such late operations being from ten months to a year and a half.

As to the risks of the operation itself, which must also be considered, if the surgeon is familiar with the antiseptic method, and if he has had any experience in operating upon this class of cases, it is safe to assure the patient, if she be in reasonably good general condition, that there is almost no risk to life involved in removal of a mamma.

After having, as I have said, assisted Dr. Agnew in a very great many operations of this kind, and after having operated upon a number myself, the total running up into the hundreds, I can safely say that there has not been, in either his practice or mine for some years, a single death as a result of an operation for carcinoma of the breast. Indeed, with perhaps one or two exceptions, there have not been for years any conditions subsequent to operation which even gave rise to a moment's anxiety as to the life of the patient. This is not an exaggerated statement, but is one which has only been made possible by the rigid application of antiseptic methods which not only brought the mortality down to *nil*, but immediately reduced the average time of healing, even after the largest wounds, from three or four weeks to ten or twelve days.

There are, of course, cases in which it will not be

[1] The operation was performed in the usual way, the growth being removed by dissection from the neighboring structures. It was enclosed in a firm capsule, and proved to be an adeno-fibroma with a great excess of the fibrous element—almost a pure fibroma. No drainage was used. The wound healed in six days.

proper to recommend operation. I would say, in a general way, that those are cases in which the extreme age of the patient, or the presence of some intercurrent disease, or the existence of some bad habit, such as alcoholism, or, preëminently, the involvement of such an extensive cutaneous and glandular area as absolutely to preclude the possibility of the entire removal of all the glands, as well as of the tumor itself, should constitute powerful arguments against operation.

On the other hand, even great involvement of the glands should not be considered as constituting invariably an insuperable bar to operation. There are reasons which may make operations justifiable, even in this class of cases, as for example; where ulceration and fungous growths have been extensive and the patient is seriously annoyed by offensive discharges, or weakened by frequent bleeding, or, in other cases, where the pain is so great as to make life unendurable.

In such instances, it is quite proper for the surgeon to operate with a clear understanding that the operation is palliative in its character, as it is, unfortunately, in nearly all cases.

Of course, the surgeon would not think of operating in the presence of carcinoma elsewhere, as in some of the viscera.

It should be remembered, however, among the arguments in favor of operation that visceral cancer is painless, as a rule, and that if internal recurrence takes place the patient will at least escape the distressing accompaniments of death by exhaustion, hemorrhage, or septicæmia, as in cases of neglected and ulcerating carcinoma.

Having advised operation, then, in carcinoma or in any other malignant tumor of the breast, what is the best method of operative procedure? I will not detain you with the details of the antiseptic methods employed; they are already familiar to you, and consist in the most scrupulous preparation of the skin of the patient, the hands of the operator, the instruments, dressings, ligatures, sutures, etc. All that I desire to-day to call your attention to is the method which I shall presently employ, and which, as I say, has been used with much success by Dr. Agnew, and in a smaller number of cases by myself. The chief question at issue among surgeons, so far as I know, in regard to the operation itself, is chiefly as to its extent—*i.e.*, as to the necessity in every case for the removal of the entire breast and the chain of axillary glands. A minor question, also under discussion, refers to the amount of skin removed. Is it, or is it not, necessary in removing the breast, to take with it all the skin which covers it—in other words, to perform the so-called "dinner-plate" operation? In reply to these questions, I would say that, first, as to the removal of the entire breast, there seems to me every reason for advocating it. Mr. Butlin, in his recent excellent work upon the *Operative Surgery of Malignant Diseases*, has brought forward what seem to him good reasons for believing this to be, both theoretically and practically, unsound; but his arguments are not convincing to my mind. The tendency of malignant growths to extend rapidly far beyond the possibility of recognition by not only the eye, or the touch, but even by the microscope, is so well known that it seems the obvious duty of the surgeon to remove every particle of such tissues in the immediate vicinity of the growth as can be taken away without undue mutilation or deformity, and with a reasonable degree of safety to the patient. I, therefore, would strongly recommend you, in cases of this kind, not to rest satisfied with anything less than the removal of the entire breast, of every portion of suspected skin, and of all the lymphatic glands of the axilla, whether they are or are not perceptibly enlarged. The severity of the operation is not materially increased in this way, while there can be little doubt that life is prolonged, and possibly the best chance is given for avoidance of recurrence, although it must always be recognized and admitted that that chance is an exceedingly small one.

As to the removal of skin, while every portion which is in the least adherent, or puckered, or even doubtful in appearance, should not only be removed, but should be given a wide berth, it seems scarcely justifiable in the light of our present statistics to subject every woman who undergoes this operation to the prolonged and tedious experience involved in the healing of an open wound of large size. It undoubtedly also increases the pain, the discomfort, and the risk of convalescence, and I have yet to learn that its indiscriminate employment brings with it any compensatory immunity from recurrence. The burden of proof rests with its advocates.

I will now proceed with the operation best suited to such cases as the present one. An elliptical incision is made, including the nipple and all the affected portion of skin, and a broad area on either side of it. The incisions extend from the sternum on the affected side to a point just below the axillary border of the pectoralis major.

The lower flap is dissected up rapidly, the dissection being carried well beyond the limits of the breast. The connective tissue beyond the breast limits, and the fascia overlying the pectoralis muscle, being recognized before the dissection stops, the flap is reverted, a few large bleeding vessels are picked up by hæmostatic forceps, and the space beneath the flaps is filled with antiseptic gauze or with towels wrung out from a hot bichloride solution. A similar flap is then formed on the upper semi-circumference of the gland.

After this, the gland having been loosened well around its border, and especially at the part toward the sternum, the operator seizes it with the hand, raising it by forcible traction made in the direction of the fibres of the pectoral muscle, to which it is often adherent. If this be the case, he will often remove with the tumor a portion of the attached fascia and muscle. This, however, is not to be regarded as a disadvantage, as such portions of tissue will probably be implicated and might escape the knife. The points of attachment are also those to which especial attention should be paid, all doubtful portions of the great pectoral being freely removed. The axillary cavity is entered by an incision through the fascia, near its anterior border, and the glands removed by blunt dissection, chiefly with the finger.

The wound is dressed with the same care observed in all the other steps of the operation. The rubber drainage-tubes are removed on the second or third day.

[Union by first intention on the eighth day was obtained. The highest temperature was 99.3°.]

ORIGINAL ARTICLES.

TREATMENT OF TUBERCULOSIS.

BY J. LEWIS SMITH, M.D.,
OF NEW YORK.

Prophylaxis.—In order to employ prophylactic measures most successfully, it is necessary to have full and accurate knowledge of the circumstances or conditions in which the disease, which we endeavor to prevent, originates. Therefore, before we consider the measures which are designed to prevent tuberculosis, we will briefly relate the following authenticated instances, which show the different modes in which this fatal malady is contracted.

H. Reich states that in an inland town in Europe, a midwife with advanced phthisis, was in the habit of blowing into the mouths of newly born infants, and ten of these infants died of tuberculosis, apparently contracted in this manner. At the same time the infants in the practice of a healthy midwife in the same town remained well (*Berlin. klinische Wochen.*, 1878). Dr. E. I. Kempf relates the following equally striking instance of infection (*Louisville Medical News*, March 22, 1884). In the fall of 1880, a girl of eighteen years, whose brother had died of consumption, was found to have tubercles at the apices of both lungs. She belonged to a sisterhood, and slept in the general dormitory with the other sisters. In four months nine of her companions began to cough, and were found to have tubercles. No one of the sisterhood had previously had disease of this kind. Dr. A. Ollivier, physician to l'Hôpital des Enfants Malades, Paris, states that a family previously in robust health occupied two small rooms opening into a narrow court. The parents, a young son, and the baby, slept in one of the rooms. An older son, who had been living elsewhere contracted phthisis, returned home, and slept in the same apartment. He died January 16, 1883. His mother, who was constantly at his bedside began to cough, emaciated, and died of the same disease in the following May. Seven days after the death of the mother, her infant had tubercular meningitis, of which it perished, and a little later the older child who occupied the same apartment, sickened and died like the mother. The father only remained of those who occupied the small room, and his immunity was probably due to the fact that he was most of the time in the open air (*Etudes d'Hygiène Publique*, 1886). The fact has long been noticed that wives in their close ministrations on phthisical husbands, occupying not only the same rooms, but the same beds, and using the same towels, are very liable to contract this disease. Moreover, I have noticed in the wards of phthisical patients in Charity Hospital and elsewhere, that young infants of tubercular mothers usually contract phthisis, which is likely to be general, and not infrequently they die before the mothers. Formerly it was supposed that tuberculosis was transmitted to such infants by inheritance, but now that its infectiousness is known, it seems probable that the transmission of this disease from the mother to her infant is post-natal and due to her intimate relations with it.

The recent experiments of Cornet (*Wiener med. Wochen.*, June 2, 1888) show that the walls and furniture of a room occupied by a phthisical patient are liable to become infected by the lodgement of the tubercle bacilli upon them, so that a healthy person occupying this apartment, simultaneously or subsequently, is in danger of contracting this disease. He rubbed the walls and bedsteads in the ward occupied by phthisical patients with disinfected sponges, avoiding such surfaces as might be infected by the hands and sputum of patients. Ninety-four animals were inoculated with these sponges and 52 of them died from causes apparently different from tuberculosis. The remaining 44 were killed after forty days, and 20 of them had tubercles. In a second experiment, 168 animals were inoculated with the dust from the walls of an infected apartment, and 90 of them died soon afterward, of which 34 were tuberculous. Of 311 animals inoculated in all, 167 died in consequence of the operation, and of these 57 were found to be tubercular and 85 without tubercles. Control experiments with dust from rooms not occupied by tubercular patients, and from the crowded streets, gave a negative result as regards the development of tuberculosis.

The important observation has been made that the dust is not infectious in rooms occupied by tubercular patients who have uniformly expectorated into cups or spittoons, which have been emptied and disinfected at proper intervals. Several observers state that their observations clearly establish the fact that neither the tubercle bacilli nor spores are exhaled in the breath of the phthisical patient. On account of the weight of these organisms it is said that they cannot be detached from the sputum, or the moist surface of the respiratory organs, so as to infect the breath in ordinary respiration. But this is a subject which requires further investigation. Certain it is that particles of dried sputum loaded with the bacilli received on towels, handkerchiefs, or other surfaces, are liable to be wafted by currents of air so that those who minister to a patient are in constant danger of contracting the disease by inhaling these particles if proper precautionary measures are not employed.

Another and probably a common mode in which the tubercle bacillus enters the system, is in the ingesta, like the bacillus typhosus of typhoid fever.

Tuberculosis is a common disease in cattle, and recent observations and experiments show that it has probably in numerous instances been caused in man by the use of milk from tubercular cows. Gerlach fed such milk to young animals and produced in them tuberculosis, manifested primarily along the alimentary tract and in the adjacent lymphatic glands. Alibert fed a litter of young pigs with the milk from a tuberculous cow, and all of them died from tuberculosis. Tubercles frequently occur in the udders of tuberculous cows, and by their presence in the tissues which secrete the milk, the milk itself is infected. Nocard discovered the tubercle bacillus in eleven examinations of the milk from tubercular cows. In the examination of 600 cows in the Edinburgh dairies, 37 were found with inflamed udders, and the milk obtained from 6 of these was found to contain the tubercle bacilli, showing that in at least these 6 cases the udders were the seat of tubercles (*Annual of the Universal Medical Sciences*, vol. i., 1889). Klebs, Bollinger, Koch, Stein, Toussaint, and Chauveau may be mentioned among those who state that milk from the tubercular udder of the cow, if given in a raw state and sufficiently long, will cause tuberculosis.

The experiments of Cornil throw light on the manner in which tuberculosis is caused by the use of infected food. He ascertained that cultures of the tubercle bacillus, introduced into the intestine of an animal, penetrated the mucous surface very quickly. In four days after introducing the culture into the œsophagus of the guinea-pig, he found submucous lesions of a tubercular nature, and even tubercular mesenteric glands without appreciable injury of the epithelial cells where the culture was introduced. Cagny relates the following instructive instance, showing how the ingesta may be the vehicle of the tubercle bacillus in animals. A man having tuberculosis, was in the habit, while walking in his garden, of expectorating on the ground. He was closely followed by chickens that swallowed his sputum with avidity. In a few weeks nearly all the chickens were found to be tuberculous, their livers especially being affected, so that it was necessary to destroy the whole brood (*La Semaine Méd.*, August 1, 1888).

Not only the milk, but the flesh of a tuberculous animal may communicate tuberculosis. At the meeting of the Congress for the Study of Tuberculosis, held in Paris, July, 1888, all the members present regarded the use of the flesh, and especially the milk, of tuberculous animal as dangerous, and recommended their "complete seizure." Jorissenne states that four cows in every one hundred are tuberculous, and in one shed of twenty cows the milk drawn from tuberculous teats presented a "prodigious number of bacilli." In Montauban during seven years, 4.07 per mille of the cattle that were slaughtered were tuberculous, and T. Spillman found 30 to 40 per cent. of the stall-fed cows of Nancy tubercular. In addition to cattle, hogs and the various domestic feathered animals are liable to tuberculosis, but the percentage of those that are affected varies in different localities, the number being greatest in animals that are stabled or penned. Tuberculosis is so common in the domestic animals that measures designed to protect families who obtain so large a proportion of their food from this source are urgently required. The possibility of the transmission of tuberculosis by vaccination has attracted considerable attention in Europe, and was discussed at the Parisian Congress held in July, 1888. To guard against this transmission, the animals furnishing the virus are, in several of the vaccine establishments, killed before the points are used, and these points are rejected if the organs exhibit evidence of disease. Still it is believed that the pure vaccine lymph, even from a tubercular animal, does not contain the bacillus, but the point may contain it if there be an admixture of blood.

Tuberculosis is most prevalent where people congregate, as in schools, factories, prisons, the city tenement houses, and least prevalent where people lead isolated outdoor lives, as the agriculturists. The effect of confinement was clearly shown by the experiments of Trudeau. He inoculated two sets of rabbits with tubercular matter: the one set, confined in a damp, dark subterranean place, were found when killed to be extensively affected with tuberculosis, while the other set, allowed to run free in the sunlight, were but slightly tuberculous (THE MEDICAL NEWS, October 27, 1888). Ziemssen says that fifty per cent. of the Sisters of Charity in the Munich Hospital die of tuberculosis. The robust and rosy-cheeked candidates of the order arrive from the country, but in the confinement of the hospital their health gradually fails, and one after another contracts tuberculosis and dies. So great is the difference in result between life in the open air and in confinement.

Again, some individuals are especially liable to contract tuberculosis on account of certain local ailments. Caseous substance occurring in any part of the system affords a nidus in which the tubercle bacillus, if it obtain a lodgement, is readily propagated. Caseation occurs most frequently in the inflammations of scrofulous children, and hence scrofula has long been regarded as sustaining an intimate causal relation to tuberculosis Strumous children with cheesy cervical glands, cheesy bronchial, axillary, or mesenteric glands, or cheesy pneumonia, usually die of tuberculosis. If exposed to cases of tuberculosis they are in imminent danger of contracting this disease. The tubercle bacillus

may also gain admittance into the system through sores or wounds of the skin or mucous membrane. Perhaps the most striking examples bearing on this point were collated by Dr. Meyer and published in the *N. Y. Med. Presse*, June, 1887. In 18 of 28 cases, the Jewish rite of circumcision had been performed, in which the operator frequently sucks the wound with his lips. In these cases of tuberculosis following circumcision, ten or fourteen days after the operation the inguinal glands were observed to be swollen, indicating commencing infection of the system. It therefore behooves one having an open sore upon the skin, or a lesion upon the mucous surface, as in catarrh of the Schneiderian or bronchial surface, to avoid close intimacy with a tubercular patient.

Prophylactic Measures.—Since tuberculosis originates in so many different ways, measures designed to prevent this disease have a wide range. Precautionary measures are especially required in the nursing of the tuberculous patient. His sputum should always be received in a cup or spittoon containing a disinfectant liquid, and this vessel when emptied should be cleansed with boiling water or a disinfectant. Sputum should never be received upon a handkerchief or cloth and allowed to dry. Towels and handkerchiefs should be moist when used, and immediately afterward placed in boiling water or a disinfectant. We have seen what disastrous results occur from the dried sputum. Whatever may be said of the innocuousness of the breath of the phthisical patient based on the supposition that the tubercle baciilus has so great a specific gravity in its moist state that it is not exhaled in ordinary respiration, nevertheless the sad experience of the midwife related at the commencement of this paper should teach us to avoid his breath, so far as is compatible with proper ministrations to him. The floors and walls of his apartment should occasionally be washed with a disinfectant liquid, and the bedding, clothing, rugs and mats should never be shaken in the apartment, but outside the house. Ventilation of the apartment should be allowed to the full extent compatible with the safety of the patient. The remedies which we will hereafter recommend in the treatment of the patient, are destructive to the bacillus, and, therefore, whenever employed have also a prophylactic action.

No physician who has read in the medical journals of the last decade the many reports of cases in which milk has been the vehicle of pathogenic organisms has failed to see the urgent need of obtaining this indispensable article from healthy dairies. Families should insist on the inspection at regular intervals of the dairies that furnish them milk, and the exclusion of such animals as exhibit the least sickness. Moreover, no one with a chronic cough should be employed in milking or in the subsequent handling of the milk But with the utmost endeavor, on the part of families living at a distance, to obtain milk free from impurities, no one can state positively that it will not sooner or later contain pathogenic organisms, as those of diphtheria, scarlet fever, typhoid fever, or tuberculosis, so many and unsuspected are the modes of infection. Fortunately, heat at or near the boiling point is an effectual sterilizing agent, and it can be employed without diminishing the nutritive properties of milk or rendering it more indigestible. I do not forget the interesting experiments which have been made to determine the tenacity of life of the tubercle bacillus, when subjected to heat and cold. In experiments made it is said to outlive most of the microbes associated with it. Schill and Fischer state that dried and pulverized tubercular matter not subjected to treatment retains its virulence six months, and Pietro states that tubercular sputum well-dried and maintained at 77°, retains its virulence nine or ten months. But what concerns us most at present is the remarkable statement made by Max Voelsch (*Centralb. für klin. Med.*, June 30, 1888), that twice boiling does not entirely destroy the virulence of the tubercle bacillus. I habitually direct that the morning supply of milk designed for children shall be immediately placed in a steamer and subjected, two hours, to a temperature of 190° to 200°. No pathogenic microbe can probably survive if subjected so long a time to so high a degree of heat. The flesh of the tubercular animal, which it is believed is often purchased by unsuspecting families, evidently requires similar treatment—that is, thorough cooking—in order to be rendered innocuous. A competent meat inspector should be employed at each slaughter-house, and all di eased meats be rejected, but in the present management of the meat market, the only sure method of preventing the presence of living and active bacilli in the meat foods appears to be by thorough cooking.

Outdoor life, residence in elevated localities, where the air is not only pure but rarefied, the occupancy of sunlit and well-ventilated rooms, the avoidance of rooms or localities where the air is contaminated by the preseuce of others, as in crowded schools or factories, or by unwholesome occupations, and all measures which promote the appetite and general health, are prophylactic, as they are also to a certain extent curative, of tuberculosis. It is evident from what has been stated above, that caseous substance occurring in any part of the system, inasmuch as it sustains a close causal relation to tuberculosis, should, if practicable, be removed by surgical measures. Moreover, since cheesy degeneration results for the most part from

inflammations occurring in the scrofulous, measures designed to prevent or cure such inflammations, or to cure scrofula, have a prophylactic effect as regards tuberculosis. The strumous child should be watched with great care, and such measures be employed as are calculated to invigorate his system. He should receive anti-strumous treatment, both hygienic and medicinal. Especially should glandular hyperplasia and the products of inflammation, whether occurring in the lungs or elsewhere, be, if possible, removed before caseation occurs. For this purpose the old remedies, like cod-liver oil and syrup of the iodide of iron, given internally, and for hyperplasia of the subcutaneous glands, ointments like iodide of potassium in lanolin, may be advantageously employed. Finally, one having an abrasion or sore of the cutaneous or mucous surface, or catarrh of the air passages, as indicated by discharge from the nostrils, sore throat, or a cough, should not attend as nurse or otherwise a phthisical patient until his local ailment is cured, since the tubercle bacillus is believed to enter the system more readily through a diseased than a healthy surface. We will next consider the treatment of tuberculosis, which is undergoing a marked change since the microbic nature of the disease has been discovered, the antiseptic and germicide remedies coming more and more into use, so that there is reason to think that, at a time not distant, this malady, instead of causing one-seventh part of the deaths of the human race, will be somewhat less frequent and fatal.

(*To be continued.*)

ON THE TREATMENT OF SCARLET FEVER BY CHLORAL HYDRATE.

By J. C. WILSON, M.D.,
PHYSICIAN TO THE HOSPITAL OF JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

It is my wish to bring to the notice of the profession an efficient method of treating scarlet fever not hitherto described. My account of this method is based upon a personal experience now extending over seven years. It therefore relates to cases and epidemics of every degree of intensity.

The most cursory review of the history of the treatment of this disease enables us to divide it, in common with that of the other acute infectious diseases, into three periods:

First, a period in which treatment was based upon the idea of depletion by means of general or local bloodletting, emetics, purgatives, and diaphoretics. It is needless to say that neither experience nor an enlightened pathology support this plan.

Second, a period in which the treatment was based upon the administration of so-called specific remedies—a method which, having its origin at a time when not only, as now, our knowledge of the specific cause of scarlatina was most indefinite, but when even the germ theory of the infectious diseases in general still rested upon pure hypothesis—was wholly without scientific basis. The treatment of this period, earnestly advocated by different observers, as its various plans were, resulted in disappointment and failure, and has of recent years fallen largely into desuetude.

As a consequence of the reaction from the disappointed enthusiasm in regard to the second plan, a third method of treating scarlet fever came into vogue. This may be described as the rational, or expectant-symptomatic plan. It is advocated in the greater number of the recent text-books upon practice. The principles upon which it is based are familiar. They depend upon our knowledge of the self-limitation of the acute infectious diseases, and our ability, the result of the accumulated experience of the profession, to modify, within somewhat narrow limits, the intensity and the disastrous effects of particular symptoms.

The general adoption of this method of treatment at the present time, when a more exact knowledge of the causation of certain of the acute infections inspires the hope that the true methods of specific treatment may yet be discovered, is not so much a manifestation of theoretical disbelief in specific treatment as it is an indication of our inability, up to the present time, to realize our expectations in this direction.

A plan of treatment which at once relieves the more urgent symptoms of the disease, and anticipates their development, fulfils, in a high degree, the more important therapeutic indications. If any such plan realizes to some extent the requirement of a specific medication, its value is proportionately enhanced.

Such is the plan under consideration.

It consists chiefly in the administration, from the outbreak of the attack of scarlet fever until defervescence, of small and frequently repeated doses of chloral hydrate. The administration of this drug in acute disease for the relief of restlessness and for the promotion of sleep is familiar. It is, in fact, a matter of every-day occurrence, especially in the treatment of diseases of children, who bear chloral remarkably well. Simply to advocate its use for these purposes would be to occupy unnecessarily the attention of the readers of this journal. The use of chloral which I am about to describe is not only different, but is based upon a wholly different view of its effects in this disease. Chloral, under this method, constitutes the drug employed from the beginning to the end of the febrile stage. If other medicaments are used, it is for the purpose of meeting special indications not fulfilled by the

chloral, or to counteract certain effects of the chloral, which, when exaggerated, are unfavorable.

The plan is as follows: So soon as the patient is suspected or known to be developing scarlatina, a laxative dose of calomel, proportionate to the age and general condition, is administered. Shortly thereafter chloral is given, in moderate doses, at intervals of two or three hours, or longer, throughout the attack. The dose varies with the age of the child; the frequency of its administration depends largely upon its effect. To infants of two or three years, a dose of from one to two grains may be given, the dosage being gradually increased with older children; that for adolescents reaching five grains. The tranquillizing and sleep-producing effects of the drug are in most instances promptly realized, the patient falling into a condition of quietude or somnolence, in striking contrast to the discomfort and jactitation which are so distressing in the well-developed disease.

The repetition of the dose should not be more frequent than is necessary to maintain this condition of quietude, a condition from which the patient may be easily aroused, and into which he quickly relapses when disturbed. It is neither necessary nor desirable to push the drug to the establishment of a deeper sleep. Profound narcotism is, of course, to be avoided. The patient may thus be kept in a condition of light repose throughout the whole duration of the fever. By this means, not only is there obtained relief from the restlessness and distress of the active period of the disease, but much wear and tear of the nervous system and some exhaustion from muscular effort are prevented. Delirium is controlled; the itching and burning of the skin due to the eruption are allayed; in a word, the greater number of the distressing symptoms of the disease are favorably influenced by the cautious and prolonged administration of chloral hydrate in efficient doses.

As a rule, the drug is easy of administration and well borne by the stomach. I have found its acrid after-taste best masked by the administration in Aubergier's syrup of lactucarium diluted, thus:

℞.—Chloralis . . . . . gr. xxx.
Syrup. lactucarii (Aubergier) } āā
Aquæ . . . . . } ℥jss.—M.

SIG.—A teaspoonful in iced water every two, three, or four hours.

The administration of nourishment immediately after the medicine is desirable. The sleep-inducing properties of the drug manifest themselves rapidly, but are not prolonged; therefore, its repetition at intervals of two or three hours is called for.

The elimination of the drug takes place chiefly by the kidneys, and to a large extent as chloral. Decomposition with the formation of chloroform does not, as Liebreich anticipated, take place within the organism. This fact is of some theoretical importance, in view of the well-recognized antiseptic properties of chloral. Chloral acts, then, as a local antiseptic upon two tissue areas that are especially prone to the pernicious effects of the infecting principle of scarlatina. These are the throat and the kidneys. It cannot be claimed that chloral, in such doses as are safe, exercises to any great degree a specific antiseptic effect upon the fluids of the organism at large. Nevertheless, the continual presence of even small amounts of chloral in those fluids may be held to exert to some extent an influence upon them unfavorable, so far as it goes, to the development of bacteria.

The local action of chloral in these doses upon the throat in ingestion, and upon the kidney in elimination, is direct and efficacious, as shown by the lower grade of intensity of the inflammation of the palatine arches and tonsils, on the one hand, and by the almost constant absence of albuminuria on the other. The diuretic action of chloral is almost invariably manifested, the urine being much increased in quantity, of lower specific gravity, light-colored, and faintly acid. The diuresis is sometimes enormous, reaching from fifty to eighty fluid-ounces in the course of twenty-four hours. In a large number of cases intercurrent abuminuria was rarely encountered, and post-scarlatinal nephritis was not observed, although the cases were kept under observation for prolonged periods.

Chloral in the doses given appears to exercise no influence upon the primary temperature curve of the disease, defervescence taking place between the seventh and ninth days by rapid lysis as is usual.

Otitis media, extensive adenopathy of the cervical lymphatics, the collar of brawn, and abscesses, under this treatment do not occur. Hence, troublesome secondary fever, by which the febrile movement of scarlatina is often prolonged indefinitely, is prevented.

In the above doses chloral does not appear to be a cardiac depressant, exerting, in the earlier periods of the disease, simply a favorable influence upon the excited heart, similar to that of small and frequently repeated doses of aconite. If during the course of the disease, especially at the beginning of defervescence, the heart flags, alcohol must be given. As a matter of fact, alcohol in the form of milk punches, wine whey, or egg-nog, forms a useful addition to the dietary throughout the course of disease.

From the beginning of the attack the nasal passages and the throat are systematically treated by antiseptic sprays, such as weak dilutions of Labar-

raque's solution, Dobell's solution, Listerine, or the antiseptic tablets devised by Dr. Seiler. This is done from the beginning in all cases. I regard it as a prophylactic measure of great importance, preventing the accumulation and retention of the morbid products of the inflamed mucous membrane and diminishing the risks of secondary mixed local infection, the cause of the throat and ear inflammations which constitute occasional complications.

From the time of the appearance of the eruption inunction is practised. For this purpose freshly washed lard is employed.

If the arrangements are such as to secure thorough disinfection of the clothing before it is washed, frequent changes are permitted; otherwise, to avoid risk of contagion, the patient is allowed to wear the same night-clothes throughout the attack. After the child leaves the room, thorough disinfection is to be practised by sulphur fumigation in the presence of moisture.

During the convalescence, quinine, nux vomica, and iron are indicated.

Whether or not other hypnotics, administered upon the same principles, would yield equally favorable results in the treatment of this disease, I cannot say. Chloralamid, among the recent synthetic narcotics, appears to be more efficient as a sleep-producer than chloral, and less dangerous; but we have yet no experience with it, nor does it possess the antiseptic qualities of chloral.

In conclusion, the following propositions are affirmed:

1. The treatment of scarlet fever by chloral hydrate without the use of other drugs has yielded satisfactory results.

2. The chief *rôle* of chloral in the treatment of scarlet fever is that of a sedative to the cerebral centres. It appears to antagonize certain exciting toxic principles formed within the organism during the course of the disease.

3. Chloral is also useful on account of its antiseptic properties, (*a*) upon the throat; (*b*) upon the kidneys; (*c*) to a slight extent upon the fluids of the organism at large.

It is necessary in this connection to bear in mind the difference between the germicide and the antiseptic influences of drugs. No amount of chloral compatible with the maintenance of life can act within the organism as a germicide. It is assumed that medicinal doses may *tend* to render the fluids of the body antiseptic, that is to say, may *tend* to impair to some extent, their fitness as culture media for pathogenic bacteria.

4. The elimination of chloral by the kidneys and its diuretic effect render it especially useful in the treatment of scarlet fever.

A CONTRIBUTION TO THE THERAPEUTICS OF TYPHOID FEVER.[1]

BY GEORGE L. PEABODY, M.D.,
PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS IN THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

THE results in the treatment of typhoid fever continue to be so bad in general in this country as to constitute a chronic opprobrium to the art of medicine here. We do not seem to be capable of approaching, at least in New York, the low rate of mortality which has rewarded the efforts of the medical profession in many cities of Europe. While we endeavor to explain our relatively higher death-rate by various differences which, without doubt, exist in the manner of collating and recording statistics in different countries, and while we may have to deal with a larger percentage of *bad cases*, cases which come under treatment in hospitals late in the disease—too late, indeed, to allow of anything like active therapeutic procedures—still, after making every allowance for local differences of these descriptions, it must be admitted that our death-rate in this disease is far higher than it should be. I believe, too, that the fact that we have not as yet arrived at anything at all resembling a general consensus of opinion regarding its treatment is in itself evidence that many cases must be improperly treated, and that in this way much of our high mortality is to be accounted for.

Those who still adhere to the expectant plan of treatment are still in the large majority here. The expectant plan seems in a general way to make us quite content with our bad results, and to lead us to expect the patient to die if he becomes gravely ill. In this plan of treatment practically nothing is done unless symptoms in themselves very disturbing or grave, or even threatening, develop; and then much is often done that is likely to be pernicious in its effects. Doctors of this class seem to be pretty well in accord as to the proper plan of procedure, and to believe that a simple *symptomatic treatment* is the rational one. If a patient have a headache he receives the bromides, or an ice cap, or both, depending upon its severity; if he develop a bronchitis he is given opium, or cough mixtures, or inhalations; if he suffer from tympanites he is given turpentine, or turpentine stupes are applied; if he have a diarrhœa he is given opium and astringents; if hemorrhage from the bowel occur, to the opium is added tannic acid or gallic acid, or some other equally useless and disturbing drug; if he become delirious, the dose of the opium is increased, or he is physically restrained; and, most pernicious of all, if his temperature reach what is considered a dangerous height, an elevation which, long continued,

[1] Read before the Practitioners' Society of New York, December 6, 1889.

would become incompatible with life, he is given a *large dose* of some antipyretic drug, and his temperature is suddenly reduced to a level which may be several degrees below the normal. Often this objectionable procedure is repeated in an almost rhythmical way for several days or weeks; and if, accompanying the fall of temperature thus produced there be a degree of prostration and feebleness of the heart which is alarming in itself, then, to counteract this bad symptom for which the drug and the doctor are responsible, alcoholic and other stimulants are given in large amount. This method of treatment, if it be proper to call that a *method* which seems to lack all true system—is often dignified by its advocates by the appellation *rational*. In fact, however, it would be difficult to devise a more irrational method than the symptomatic method, carried to its logical issue. It would be quite as proper to treat perityphlitis symptomatically as to treat typhoid fever so; and yet who would think of treating the constipation of perityphlitis by purgatives? Who would now think of withholding food or drink of proper kinds from a fever patient merely because he may prefer, having no appetite, to be left undisturbed rather than to take an adequate supply of nourishment at definite intervals? And yet, if we are to be guided simply by *symptoms* in the treatment of this disease, the presence of anorexia should lead us sometimes greatly to diminish, and sometimes totally to withhold, the supply of food.

Unfortuately, those of us, on the other hand, who believe in treating the disease upon some other and more definite system, are still very far from being in accord as to the best method to pursue in the average case.

In the uncertainty which still prevails in this branch of therapeutics, it would seem that any one possessed of any facts bearing upon the subject need offer no apology for presenting them to his brethren.

During the past year it has fallen to my lot to treat about fifty of these patients, chiefly in the New York Hospital and the Bellevue Hospital. It would be premature to say that results were due to treatment, inasmuch as this number of cases is very small, and also because the same method of treatment was not pursued in each case; but that the results followed the treatment, and that, all things considered, the results have been in the main satisfactory, seem to justify a brief publication of the general plans adopted.

That the severity of the type of fever prevailing in one year may differ greatly from the severity of the type of the next year, has often been noted. As the fever prevailed here last year it seemed to me to be of much less severe type than is usual in New York; and this year it seems to me to be fully up to the average degree of severity. It may, therefore, well be that good results, which in numerous cases attended the plan of treatment by intestinal antisepsis last year, are really to be explained by the fact that the disease which prevailed at that time was of an unusually mild type. The antiseptics which I used last year in the New York Hospital were *resorcin* and *beta-naphthol*. When patients entered the hospital sufficiently early in the disease, that is to say, within the first ten days, the routine method was to administer a calomel purge of ten grains, and then immediately to follow this drug by a dose of one of these antiseptics, which was repeated at varying intervals, day and night, as a rule, until the temperature became normal, and remained so.

When resorcin was used, it was given in the dose of five grains every four hours; when beta-naphthol was used, its dose was two grains, given every two, three, or four hours, depending upon its effects. These drugs were administered in pill form, and each pill was carefully coated with keratine, to insure it against changes to which it might have been subjected in the stomach. Thirty-three well-marked cases of this disease came under my care in this hospital last year, and of these, twenty-seven were treated antiseptically in one of the ways indicated.

But little use was made of any of the newer antipyretic drugs, though in some cases occasional doses of phenacetine were administered. This formed no part of the *plan of treatment*, and was ordinarily given only a few times when the temperature remained persistently high.

The effects of the antiseptics upon Ehrlich's reaction were interesting. This reaction, even though it might have been ever so plainly present when the patients began treatment (and it was so almost invariably), usually disappeared after the first few doses, and remained constantly absent while the drugs were given. In several cases, for experimental purposes, the drugs were stopped, and the reaction promptly returned, to disappear again when the administration of the drugs was resumed. Of unpleasant consequences of these drugs, I have to record the occurrence of blood, albumin, and casts in the urine in a few patients who took beta-naphthol. These symptoms were always looked upon as positive indications to discontinue the drug, and they disappeared promptly when it was stopped. Resorcin produced absolutely no unpleasant effects.

The effects upon the temperature and duration of the disease seemed sometimes quite unmistakable, and to be about the same in the cases of those who were taking either drug. In six cases the fever lasted seventeen days or less, in three it lasted only two weeks, and in nine cases the fever ceased entirely in just three weeks—all from the date of its commencement. In the other cases it lasted generally about four weeks, though in a few instances

it continued over four weeks and did not seem to be materially influenced by the treatment. In two of these it lasted five and six weeks respectively. Among this latter class, however, are included two cases which can hardly be said to have been subjected to this plan of treatment, for they died in one and two days respectively after the treatment was begun.

Of these twenty-seven patients five died; but of these one was under this treatment only one day, two others only two days, and a fourth only six days. Of these deaths, one was due to extensive ulceration of the colon with profuse and wasting diarrhœa; one to profuse hemorrhage; one to lobar pneumonia; and two to parenchymatous nephritis. These two latter were treated by beta-naphthol and resorcin, respectively one and six days. In consequence of its short duration the treatment could hardly be considered the cause of this grave symptom. The height of the fever seemed to be even more markedly affected than its duration, and the comfort of the patients was proportionately promoted. In most cases it did not rise above 103° F. after treatment was begun, and it ranged usually between 100° and 102°.

Twenty-two of the patients were males and five were females. All but seven were twenty-one years of age or older, and these seven were aged respectively eight, eleven, fourteen, sixteen, seventeen, eighteen, and nineteen years. The fatal cases were aged respectively seventeen, twenty-four, twenty-five, twenty-six, and thirty-five.

Milk was always the chief, and, usually, the only food, until the patients became *very hungry* shortly before the temperature became normal, at which time eggs, chops, or steak were allowed.

Excepting the complications mentioned in relation to those who died, but very few and chiefly insignificant complications occurred. There were but two relapses, and these were not serious.

Diarrhœa was present among the early symptoms in a majority of these patients, and it was usually well influenced by the drugs given without opium or other astringents.

The eruption was nearly always present, and was not affected by treatment.

Albuminuria was often present, but never became an alarming symptom, except in the cases of the two patients who died of nephritis after having been under treatment one and six days respectively.

Estimated by mortality percentage alone, this record cannot be claimed as a brilliant showing for intestinal antisepsis; and it may well be that further experience will lead us to abandon the hope of being able to attack this disease at the site of its most marked lesion; but, all things considered, the results are certainly better than those which have followed the expectant plan of treatment in any year in this hospital.

I desire to say that I have been greatly aided in the tabulation of these and other statistics of these cases by Drs. G. H. Cobb and H. A. Griffin, of the house staff.

It would be a source of great regret to me to give the impression that I consider this method of treatment as to be compared with the antipyretic method, *i. e.*, the antipyretic effect of cold water applied to the surface of the body.

It seems to me that any one at all open to conviction by statistics cannot but admit that the recent statistics of Brandt, as quoted by Professor H. C. Wood, of Philadelphia, in the recent edition of his text-book on *Therapeutics*, make a marvellously good showing for the cold water treatment. After reading these statistics it would seem as if all other plans of treatment were of insignificant value when compared with this one.

Unfortunately, however, two factors of vital importance in the treatment by cold baths seem likely always to be lacking here. The absence of these will probably always prevent our being able to save as large a proportion of patients ill with this disease as is now saved in Germany, and must reconcile us to our higher morality, although I firmly believe that our death-rate, even under existing unfavorable conditions, is needlessly high. I allude primarily to the fact, to which reference has already been made, that patients habitually come under observation and treatment later in the disease than is the case in Germany. It is well known that in Germany and Austria many patients are received into hospitals with various trifling maladies that would not be supposed to justify them in seeking hospital treatment here. Thus people acquire the habit of going to hospital upon comparatively slight provocation in general, and do not wait, as is so commonly the case here, until their illnesses become pronounced and severe. It is, I think, exceptional for us to see in hospital a patient in the prodromal stage of a typhoid fever, or even in the first few days of the pyretic period, except when we give him the disease in the hospital, as sometimes happens. This coming under treatment late deprives them of *some* chances of recovery, no matter what plan of treatment be adopted. The second misfortune which militates against our success in the treatment of this grave disease, is the unsatisfactory manner in which our hospitals are conducted. The shifting attendance of several doctors, each for a few months only in every year; the rapid changes by rotation in the house staff; the constant changes in the nursing force, and often the unsatisfactory character of the nursing; all these evils render it impossible for most physicians to carry out promptly,

efficiently, and with due regard to the exigencies of each case and on a large scale, any such thorough and systematic method as the cold water treatment of fevers. We cannot ourselves become thoroughly familiar with the method, and cannot, of course, properly train and discipline a shifting and temporary body of assistants and nurses.

In the face of these discouraging facts, I have lately been trying to accomplish the principle of Brandt to a certain extent by other means than the cold bath. We receive into Bellevue Hospital a considerable number of patients suffering from this disease. But they are recruited largely from the poorly fed, badly nourished, and intemperate classes, and they usually come under treatment late in the disease. Many of these patients do not bear the cold full-bath well. The depression which it causes seems to be too profound, and the reaction from it very slow.

Accordingly, I have been trying to keep the temperature of the patient constantly at or below 102° F. without the use of cold baths. This is often well accomplished by the *cold pack*, administered whenever the temperature rises above 102°, no matter how frequently it may need to be applied. Few even of this unpromising material do not bear this procedure well, and only occasionally is one encountered in whom the pack when properly applied is not capable of causing a prompt reduction of temperature. Occasionally a patient is met with whose temperature shows such a tendency to rise immediately after the pack as to render the repetition of the procedure necessary after but a brief interval. Under these circumstances I have found it desirable to combine the wet pack with the administration of a small dose of an antipyretic.

It is never desirable in this disease to give these drugs in the large doses which were in vogue when we first began to use them. Moreover, it is well to bear in mind that they are rapidly eliminated from the body, and that to be of continuing effect they must be given in small and frequent doses. No good is likely to result from an occasional large dose of them.

If, however, we use them in *small and frequent doses to supplement the effects of the cold pack*, I believe that they become of distinct value in the treatment of this disease.

Many patients whose fever is not controllable by cold packs alone respond promptly to a cold-pack *plus* five grains of antipyrin, the latter given as often as *every hour*. Both these should indeed be repeated as often as this while the tenperature continues above 102°.

It soon ceases to be necessary to repeat either at very short intervals, and after a few days the drug can usually be discontinued entirely and the frequency of the cold pack greatly diminished. The latter is rarely necessary oftener than four or five times in twenty-four hours.

Once in a while it happens that the packs are not well borne at the commencement, and the fall of temperature caused by them may be then not sufficient to justify their continuance.

In such cases I have found that a few doses of an antipyretic drug, just enough to cause the temperature to fall a few degrees, can be well followed by the combination of the packs and antipyrin, as already described.

This endeavor to carry out the principle of Brandt, in so far as it relates to keeping the temperature continuously low throughout the disease, is certainly worth a trial, and can be recommended to those whose clinical material and resources do not allow of the use of the cold full-bath. This is probably the most important principle involved in the antipyretic treatment of fevers, and experience has led me to believe that it will commend itself to all who apply it consistently *in any way* to a considerable number of cases. I have treated a few cases throughout their period of fever by the administration of five grains of antipyrin every hour, and a few others by giving small doses of sulphate of thallin every hour in the same way as long as the temperature remained above 102°. The elimination of these drugs is so rapid that there is no danger of a cumulative effect in using doses like these, and therefore no liability to sudden or great fall of temperature with cardiac depression.

At the same time, the increased heat diffusion is very great, and the general principle of Brandt of keeping the temperature continuously low can thus be carried out.

The cold-pack, however, for the average case that will not stand the cold bath is doubtless decidedly preferable to this plan.

In the past few weeks I have subjected eleven cases in Bellevue Hospital to treatment by the cold-pack, and with very gratifying results. The house physician, Dr. Painter, has kindly supplied me with data of these cases, taken from the hospital records. These patients all got well. They were all adults, only one as young as twenty years, and most of them made of the very poor material which seeks admission to our public hospitals in this city. In most of them the temperature was persistently high, and they came under treatment late in the disease —*i. e.*, after it had lasted between one and three weeks.

In a few instances the pack was kept up for fifty minutes, and ice was occasionally rubbed over the surface of the wet sheet which covered the patient. If, however, the method be persisted in, the patient being treated otherwise with care and discretion, it

is usually not long, not more than a few days, before the temperature will remain habitually below 102° in response to a single pack in a day, and that of only a few minutes' duration.

It is a matter of greater importance than is commonly supposed that these patients should not be kept too warmly covered in the intervals between the packs. It should be borne in mind that we wish to increase heat diffusion as much as possible, and that this is to be promoted directly in proportion to the thinness and conductivity of the patient's covering. Under no circumstances should a fever patient have any more covering than due regard to his comfort renders necessary; and his unaided sensations are not always a safe guide. In his obtuse condition he often thinks that he wants several blankets, when a little gentle persuasion will lead him to believe that he really needs but one.

On the whole, the method of treatment by the cold-pack has been more gratifying to me than that by the internal use of antiseptics: but I wish again to emphasize the importance of using it systematically and so frequently as to keep the temperature always below 102°.

CLINICAL MEMORANDA.

SURGICAL.

Two Cases of Excision of the Wrist-joint.—The comparative rarity of the operation of excision in cases of disease of the wrist-joint so extensive that a removal of the entire articulation is necessary, the prevalent idea as to the danger entailed by the operation, and the scepticism with which many surgeons regard the possibility of preserving a useful hand after a complete resection of the wrist, have induced me to place on record the following cases upon whom I performed this operation.

CASE I.—B. P., widow, æt. forty-eight, a cook by occupation. Both parents, four sisters, three uncles, husband, and one child died of pulmonary consumption. Has always been remarkably well and strong with the exception of an attack of rheumatism of the knees and ankle ten years ago; from this she suffered much pain for several weeks but was not disabled. Three years ago, when much fatigued and overheated, she wrung out a number of towels which had been soaking in ice-cold water. Her right wrist pained her through the night and was stiff next morning. This stiffness shortly wore away with use, but returned again at night together with sharp cutting pains which disturbed her sleep. In three months her hand became so stiff, painful, and weak that she had to give up work. Since that time the local condition has gradually become worse, there has been a progressive swelling of the joint, the pains at night have been intolerable, the hand has become absolutely useless, and there has been a serious deterioration in her general health.

Admitted to Philadelphia Hospital, July 16, 1889. The hand was held rigidly between flexion and extension; the fingers were extended, swollen and stiff; the thumb could be moved slightly. The muscles of the forearm were greatly atrophied and the anatomical points of the wrist were marked by an obscurely fluctuating, very tender, fusiform swelling, most marked upon the dorsal aspect of the joint. The styloid process of the ulna was prominent, the corresponding bony point of the radius could be found with difficulty.

Tonics, splints, pressure, and extension, together with local applications, were tried for one month, but produced no effect upon either the pain or swelling. The patient was willing to submit to any measure which would afford her a chance of relief.

August 16th, the joint was excised; a single long dorso-radial incision, beginning an inch and a half from the articular extremity of the radius and running obliquely downward to the middle of the metacarpal bone of the index finger was made into the joint. Caries and suppuration had already begun, and had involved the articulation so extensively that complete excision was necessary. All the carpal bones were removed, and the diseased articular surfaces of the radius, ulna, and metacarpal bones were cut away by means of the metacarpal saw and bone- forceps, and the diseased synovial membrane was carefully dissected out with knife and scissors. A tourniquet was not used; the tendon of the extensor carpi radialis was the only one divided, and but a single vessel required ligation. A counter-opening was made in front of the wrist, a drainage-tube was pushed through, the large cavity left by the removal of so much bone was packed with iodoform gauze, and after a careful antiseptic dressing the hand was placed on a Bond splint.

The operation lasted nearly an hour, and at its close the patient's temperature was 96.4°. She reacted quickly and pursued a typical apyretic course to complete healing. Passive motion of the fingers was begun the day following the operation. In two weeks the Bond splint was replaced by a light metal splint allowing more freedom of motion, the arm was rubbed and faradized daily, and the patient was encouraged to use the hand as much as possible.

At the present writing, three months from the time of operation, this patient has a useful hand and one entirely free from pain. She can pronate and supinate, slightly flex and extend all the fingers, oppose the thumb, and has resumed her sewing. A great part of her remaining disability is due to the pronounced muscular atrophy, which, in time, will probably disappear.

CASE II.—M., æt. twenty-eight, housewife, of dissolute habits. Was bitten in the hand while fighting with a woman. Very violent inflammation followed, involving the tissues beneath the palmar fascia. Fearing that she would be "cut" she refused to see a doctor for two weeks, when the extension of the swelling of the forearm induced her to apply to the Howard Hospital for relief. An examination showed that there was a purulent infiltration not only of the sub-palmar structures, but also of the wrist-joint. The parts were freely incised, irrigated and drained, and the hand was put upon a palmar splint. This promised well for a time, but the patient persisting in the free use of alcohol, suppuration became very profuse, the pus showed a tendency to infiltrate the forearm, and marked symptoms of absorption developed. Amputation was strongly advised but absolutely rejected by the patient. Excision was

then suggested, and to this she consented. The radial and ulnar incisions of Lister were made, and the extremities of the radius and ulna, all the carpal bones, the necrosed metacarpal bone of the thumb, half the metacarpal bone of the index finger, and the articulating extremities of the remaining metacarpal bones were removed. All the suppurating area which could be reached was curetted, the wounds were freely drained, and antiseptic dressings and a Bond splint were applied. The night following this operation the patient was intoxicated; the following night she had some difficulty with her friends, and rising from her bed cleared the room of them, using her splinted arm as a weapon. Suppuration followed this, and amputation being still refused, bichloride irrigation 1:1000 was continued for three weeks, vent being given to the pus by frequent incisions. At the end of this time an opening made in the palm for the evacuation of a fresh collection of purulent matter showed that the flexor tendons of the index and middle fingers were sloughing, and the patient at last consented to an amputation. She subsequently regained her health completely. An examination of the amputated hand and wrist showed that the seat of excision was filled in with newly formed fibrous tissue, and that a continuance of the suppurative process was caused by necrosis of the second and third metacarpal bones.

In the first case the stiff and useless hand held in very slight extension with fingers straight, the tender, obscurely fluctuating, fusiform swelling, not accompanied by obvious heat or redness and of several years' duration, the steady progress of all bad symptoms in spite of very careful and long-continued treatment, and the distinct tubercular element in the family of the patient on both the mother's and father's side, made the diagnosis of tubercular arthritis almost positive.

For three years before her entrance to the Philadelphia Hospital she had been under almost constant medical treatment. She had taken large doses of anti-rheumatics for long periods of time, had been frequently blistered and counter-irritated locally, the wrist had been thoroughly manipulated (a most dangerous practice in these cases) mercury and belladonna ointments, equal parts of each, iodoform ointment, splints, pressure bandage, and finally ichthyol ointment, 50 per cent. in lard, extension, and the plaster-of-Paris bandage, had all been tried. The constant and wearing pain, the impairment in general health, the failure of palliative measures, and the tubercular family history were the factors which called for a prompt operation. The family history was of especial importance in the case, since the fact that wrist-joint tuberculosis is particularly liable to become disseminated is well recognized. The excision was accomplished through a single incision, but not so readily or quickly as in the case where the two incisions of Lister were employed. There is no objection to be urged against the additional opening over the inner and anterior aspect of the joint. The packing of the cavity with iodoform gauze is, in view of the antitubercular effect of iodoform, to be particularly commended; and a most important factor in the favorable treatment of this case was, I think, the persistent passive motion which was begun the day following the operation.

The second case is illustrative of a class to which resection is not adapted: the bone disease was so extensive that entire removal down to healthy tissue would necessarily have left a flail-like hand. Since several of the metacarpals were involved along the greater part of their shafts, the inflammatory action in the hand had already been so widespread that nothing better than absolute fixation of all the flexor tendons could be looked for. The joint was removed in this case simply as a means of lessening the suppurating area.

The operation of wrist excision is tedious but not difficult; no important bloodvessels and but one tendon are cut. To diminish the space between the metacarpals and the forearm bones after the operation, I should in another case be inclined to adopt the method of Lauenstein, who, after operating in the usual way through the long dorso-radial cut, sutures his wound transversely, thus not only bringing the hand and forearm nearer together, but also placing the latter in the position of extension, a very distinct advantage from the standpoint of future utility. EDWARD MARTIN, M.D.

An Analysis of Nine Cases of Penetrating Stab-wounds of the Abdomen Treated by Laparotomy.—Laparotomy for traumatism is daily becoming such an important factor and such a universally recognized method of procedure in modern surgical operations that it needs neither eulogy nor defence. The rule seems well established, that in cases in which penetration of the peritoneal cavity has occurred abdominal incision should be promptly done, and the viscera carefully examined. If the intestines or stomach be wounded, rectal injections of hydrogen usually demonstrate the existence of the lesion prior to operation; but that cannot always be relied upon, unless used with great skill, for I have seen it fail from want of skilful manipulation, and that too in a case which, upon subsequent section, disclosed a large ragged wound extending directly through the stomach. Should hydrogen injections give assurance of no intestinal injury, an "exploratory" incision may be necessary to determine the existence of other visceral lesions or internal hemorrhage. By this means the latter can be checked, and foreign substances, as clothing and clots, washed out. Nor does this seriously complicate an already grave state.

The conditions existing in a case in which operation is necessitated as the result of traumatism are usually the most unfavorable, and exactly the contrary to those present when disease compels surgical interference. In a series of nine cases of penetrating stab-wounds of the abdomen treated in the Pennsylvania Hospital during a portion of my term as surgical resident, an analysis reveals the following conditions: Six of the patients were intoxicated upon admission. Seven received their wounds in fights, and five of this seven had various other injuries accompanying the stab. Three had more than one penetration, and eight had more or less visceral injury. Shock, generally profound, sometimes amounting to collapse, was present in all but one case, and was undoubtedly in a great measure due to internal hemorrhage in six patients at least. Death supervened in six cases from shock, exhaustion, or delirium tremens. Operation was promptly performed in all cases, four hours being the longest time between the reception of the wound and operation.

The *modus operandi* adopted in the treatment was practically the same throughout. Intestinal wounds were sutured with fine silk or catgut. Hot distilled water irrigation, with glass-drains, was commonly employed.

Peritoneum, muscles, and skin were included in each suture, and full antiseptic dressings finally applied. Drainage-tubes were kept clean by frequent emptying with a hard-rubber syringe and a stilette armed with absorbent cotton. Liquids were given sparingly by the mouth, stimulants being administered hypodermatically. Opium was but rarely used.

The large percentage of deaths was due, it seems to me, to several causes. Most of the patients admitted that they were steady, hard drinkers. Several were Italians, whose physical condition was by no means the best, nor were they, as a rule, able to bear with any degree of fortitude the pain necessarily entailed. All were in a condition of shock, from which some did not react before the time when it was deemed best to operate. In several great handling and exposure of the intestines were necessary, both to locate perforations and bleeding points. Ether nausea was common, and at times persistent. Tympany was usually an obstinate symptom. The complications were wounds of the bladder, the liver, the kidney, and the lung.

In a series of such severe cases we naturally expect a high mortality, but I cannot conceive that *any* of the above could have recovered without operation, and do not believe that the operation in itself contributed to the number of deaths. WALTER D. GREEN, M.D.

A Case of Strangulated Inguinal Hernia, the Protrusion being Epiploic Appendices—Radical Operation—Recovery.—The following case, although not unique, presents, I think, one or two points of interest, for which reason it is placed on record.

F. C., aged forty-four, a glass-blower, the subject of a left inguinal hernia, for which he had worn a truss for some years, was admitted to my wards in the Episcopal Hospital at midnight on the 8th of July, his rupture having come down about twenty-four hours previously and having resisted his usual manipulations to reduce it. At the time of admission the hernial tumor was found by the resident physician, Dr. B. B. Reath, Jr., to be tensely swollen, and efforts at taxis tried to the limit of safety were unsuccessful. There was no general or constitutional sign of strangulation, although there was considerable local pain. The patient was put to bed, a dose of opium given, the thigh placed in the position most favorable to relax the part, and an ice-bag laid upon the swelling. When I first saw the patient, at my visit at noon on the 9th of July, or twelve hours after his admission, the local tenderness had increased somewhat, and there was general abdominal pain, the features were becoming pinched and the countenance anxious. There was no vomiting, and there had been an evacuation of the bowels since the rupture had come down. A gentle trial of taxis convinced me that nothing could be accomplished in that way, and I decided to operate at once, and obtained the patient's ready consent. Making an incision the full length of the tumor, the upper angle being over the position of the internal abdominal ring, where the constriction could plainly be felt through the tissues, the sac was speedily exposed, and, my intention being to make the operation radical, I carefully separated it from the spermatic cord—a task that was far from easy, not only because of numerous adhesions but also because the sac was irregular, or sacculated in shape. The separation accomplished, I carefully opened the sac, giving exit to a considerable amount of blood-stained serum, and investigated the nature and condition of the contents. At first I supposed what I saw to be a small portion of the great omentum—an epiplocele—but I afterward discovered that it was two epiploic appendices, deeply congested and firmly matted together. The colon to which the appendices were attached was held firmly at, and was partly pinched by the mouth of the sac. Ligatures were applied to the two appendices, and they were cut off, and a third one which came into view within the ring was similarly treated. A strong silk ligature was applied to the neck of the sac, my finger being within it and guarding the ring while the knots were tied. The sac was then cut off, and the stump secured by stitches to the muscular tissue above the internal ring. Drainage was provided for by several strands of catgut brought out at the upper angle of the wound, and a small drainage-tube at the lower angle. Stitches were then carried through the muscles and the aponeurosis above, and Poupart's ligament below, and the canal so closed, and the lips of the wound brought together with superficial sutures.

The progress of the case was excellent, save for a rise of temperature in the evenings of the fourth and fifth days, to 103°, due to constipation, on relief of which it fell to normal and so remained throughout. On the eighth day the drain-tube and the superficial silk stitches were removed, and healing appeared to be about established. At the end of the second week the upper angle of the incision broke down and gave exit to a few drops of pus, and in a few days the ligature which had surrounded the neck of the sac came away, a deep ulcer being left over the position of the internal ring, and communicating with a sinus running beneath the superficial fascia nearly the whole length of the inguinal canal. Healing took place gradually, by granulation, the patient being kept in bed until it was complete, altogether about eight weeks. At the end of ten weeks he was discharged with a firm cicatrix.

This is the second case in which I have been disappointed by failure to secure thorough and rapid healing after closing the wound in the manner above described. In both, the integument healed speedily but soon broke down, and, after all, cicatrization by granulation took place. I am now inclined to look upon this as desirable, and as leading to a firmer cicatrix than that which results from primary union. The operation of McBurney is, I am satisfied, the most rational, and holds out the best promise of permanent cure.

The length of time the patient should be kept in the recumbent posture is a point of the first importance. He should not be allowed to get up until healing is *complete*, nor in any case in less than six weeks. This is the rule I follow.

THOMAS R. NEILSON, M.D.

A London Polyclinic.—A system of post-graduate instruction has, for the first time, been inaugurated in London, under the presidency of Mr. Jonathan Hutchinson. The secretary of the first course may be addressed at No. 60 Welbeck Street, West. An abundance of clinical opportunities, hitherto unused, will be available to those associated with the new school.

HOSPITAL NOTES.

THE TREATMENT OF SIMPLE PYLORIC STENOSIS BY GASTRO-ENTEROSTOMY (BY ABBE'S RINGS), RATHER THAN BY LORETA'S STRETCHING OPERATION.

Abstract of a Clinical Lecture, Delivered at the New York Hospital, December 5, 1889.

BY ROBERT F. WEIR, M.D.,
ATTENDING SURGEON.

DR. WEIR, at his clinic at the New York Hospital, performed the above operation by means of Abbe's catgut rings, on a patient aged forty-one, whose symptoms of vomiting and emaciation had lasted nearly two years. Only once had blood been vomited, and this, with the duration of the case and the absence of a perceptible tumor even when examined under anæsthesia, together with the continuance of hydrochloric acid in tested meals, led to the conclusion that the stenosis was non-malignant, and that it was possibly due to the contraction of an ulcer. The distention of the stomach was great; it held eight pints of fluid, at which time it could be felt three inches below the umbilicus. Ewald's salol test revealed the decisive discoloration only one and a half hours after ingestion of the drug. The patient's weight was 104 pounds.

The operator presented to the class, at some length, his reasons for the choice of gastro-enterostomy on the patient then before them, and gave a rapid review of the various methods resorted to in the treatment of pyloric disease by operation. He cited the fact that in the eighty-one cases of pyloric resection with sixty-one deaths collected by Winslow, there were reported six cases in which this operation was performed for non-malignant disease of the pylorus—in three of these cases, however, death resulted. The mortality of resection alone must throw it out of consideration, and resection of the pylorus, as at present conducted, is an operation without much future, unless intestinal anastomosis done with plates or rings may so far shorten the operation as to diminish its risk. An allusion was here made to Billroth's celebrated case of resection of a cancerous pylorus with turning in the ends of the duodenum and stomach, making them thus blind cul-de-sacs and the opening between the two being subsequently effected by a gastro-enterostomy. This operation appeared to him, with the use of anastomostic plates or rings, to be better than the one now in vogue. Heinecke's pyloroplasty was described, but was not considered as applicable in this instance, being more fitted for ulceration with hemorrhage. Loreta's operation of incising the stomach and stretching the pylorus was then detailed, and the cases collected by Drs. Bull and Barton, who have each recently reported a success in the operation, were analyzed. Out of the twenty-five operations of this kind that have been collected, there were ten deaths or forty per cent. of mortality, a rate not altogether due, as some might justly think, to the inexperience of the operator—for Loreta himself, in 1887 and 1888, resorted to this procedure seven times with two deaths. This mortality was very high, and even though brought down in the last twelve published cases to 25 per cent., it presented such a risk, that if another way of accomplishing the same thing could be found it should, of course, be used. The re-contraction that follows or may follow the operation of stretching, though much less than was expected from the analogy of strictures thus treated elsewhere, must not be cast entirely aside from the consideration of this part of the subject. Loreta himself had encountered the re-contraction three times, in two of which a second operation was resorted to. However, it may be said in behalf of the stretching operation that one of the causes of death, to wit, hemorrhage, and, perhaps, others, can be avoided not only by more gradually conducting the dilatation, but also by refraining from stretching the pylorus as far as Loreta directs, as it is becoming apparent that this has been carried to a too great degree, and that a separation of two inches attained by the surgeon will suffice, instead of three inches, as Loreta advised. The fact of this stenosis being sometimes a prodrome of malignancy should also be borne in mind.

Reverting, however, to the mortality of the operation itself, an investigation of the results of gastro-enterostomy in the non-malignant strictures of the pylorus has shown sufficient evidence of the superiority of this operation in the latter respect to warrant its further adoption. Rockwitz, for instance, has given in his collection of 29 gastro-enterostomies 7 cases (to which can be added 1 of Mikulicz's and 1 of Hahn's, or 9 in all) where this operation was resorted to, in non-malignant stenosis, with but 1 death—that is to say, with but 11 per cent. of mortality. These operations were done under the old method, requiring on an average from two to two and one-half hours for their performance and the insertion of sixty to eighty stitches. It was also proven by these operations that the nutritive conditions were amply preserved in a successful gastro-enterostomy, and that the necessary interference with the flow of food material from the stomach to the point where the small intestine had been tapped resulted in no evil. The mortality of gastro-enterostomy for cancerous stenosis was then presented to lend proper force to the clinching of the argument brought forward. It amounted in twenty-four cases to 42 per cent.

Since Senn, of Milwaukee, has taught the use of decalcified bone-plates to secure, with the least amount of suturing, the apposed peritoneal surfaces when an opening is to be made between two portions of an intestine, or, as now in point, between the stomach and the intestine, time, so largely important in abdominal operations, is greatly saved. Under this method, or some modification of its technique, and notably in the material with which the opposing plates have been made, eleven cases of gastro-enterostomy for cancer have been reported, and with the remarkable result of but one death (McBurney's case), where the operation was resorted to when the patient was nearly moribund, or a mortality a little over 9 per cent Remarkable, because it is to be contrasted with the 42 per cent. from the old operation. Even a better result is to be expected in the less deteriorated condition of a patient suffering from starvation alone, as in a simple stenosis, and not starvation and disease combined, as in a cancerous stenosis.

Dr. Weir's operation was done under ether, the stomach having been previously, and for several days, washed

out with a boro-salicylic solution, and the peritoneum opened by a four inch median incision running from the umbilicus upward. As soon as the peritoneal cavity was reached, the finger and thumb of the right hand were introduced, the omentum and large intestine pushed up out of the way, and the vertebral column felt for, which guided to the pancreas, and thence passing from right to left, the end of the jejunum was hoped to have been seized as Hahn suggests. But this endeavor was not crowned by success, which apparently justified the statement of Luca, based on his experience of eight cases, that it was more often missed than secured by this procedure. So the advice of the last-named surgeon was followed, not to delay long in searching for the required portion of the bowel, but to draw out a loop of intestine, and either by comparing the two ends of the same and following the smaller portion, or by applying Nothnagel's salt test with its ascending peristalsis, and acting accordingly. Both the methods failed, and the predetermined intent of the operator not to spend much time in this search, nor to disturb the parts to any great extent, was carried out, and the plan practised with success (of eight cases and one death) by the same surgeon, of seizing any loop of small intestine with a long enough mesentery, to allow of easy apposition to the wall of the stomach, was followed. The loop was withdrawn from the peritoneal cavity, and also a portion of the stomach close to the gastro-colic fold. The two peritoneal surfaces were first sewn together by a continued silk suture, to correspond to the posterior edge of the catgut rings when inserted, as after the application of the rings this suturing would be more difficult to accomplish. The small intestine was then opened opposite the mesenteric attachment for a distance of two inches, the hemorrhage was arrested by temporary clamp pressure, and an elongated Abbe's ring inserted and held *in situ* by six sutures carried through the wall of the bowel about one-quarter of an inch from the incised edge. The stomach was then opened to a corresponding extent, nearly four inches from the pylorus (a little further from this point than was intended), and its ring similarly introduced and fixed *in situ*, and the various sutures tied in pairs, beginning with those on the deepest side and alongside the first applied row of peritoneal sutures. Finally, a continued suture, beginning where the last one left off, was carried around the anterior surface, and secured everything tight and snug.

This secondary suture was of value in two ways. At one place the rings failed to hold in the inverted peritoneum and showed the divided mucous membrane, which condition has been occasionally noticed in the use of the broader decalcified bone plates. The outer stitching remedied this at once. Furthermore, the stitching was carried some distance beyond the line of the included rings, especially toward the pylorus in order to aid in preventing the formation of a spur in the small intestine as it dragged downward. The opening was made purposely large to avoid ill effects should such a spur be formed. The examination made outside the stomach during the rapid search for the pancreas showed a moderately enlarged hard pylorus and from within the viscus its opening was about the size of a lead-pencil and of a gristly feeling. The operation from the opening to the closing of the peritoneum took thirty-five minutes. Total time forty-five minutes—from skin incision to closure of the same. At the end of the operation patient was in good condition. During the operation only the loop of intestine and the portion of stomach were outside the abdominal wall, the peritoneal cavity being shut off by antiseptic compresses and sponges.

NOTE BY DR. WEIR.—December 10th—five days after the operation—the patient's progress has been very satisfactory, only disturbed for a few hours at the end of first day by the appearance of albumin and sugar in large quantities in the urine. Neither had been found at various testings prior to the operation. These disappeared, the sugar first, in the next twenty-four hours. This may have been due to the anæsthesia, which I strongly doubt, or to the handling of the pancreas and left kidney, or possibly of the solar plexus. He began on the third day drinking water and beef-tea freely, the nourishment being aided by rectal enemata of peptonized milk and whiskey. Since then peptonized milk and raw eggs well beaten have been allowed him. A recovery seems assured.

MEDICAL PROGRESS.

Hypodermatic Injections of Salt Solution in Hemorrhage.—In the Dresden Lying-in Hospital the plan of introducing a large quantity of a solution of common salt under the skin has been employed with success in several cases of severe post-partum hemorrhage. The solution is of the strength of 0.6 per cent. (sixteen grains in a pint), and the quantity injected is somewhat less than a quart. The spots selected for the injection are the infra-clavicular and the infra-scapular regions. During the operation the swelling produced under the skin must be manipulated by a shampooing movement so as to disperse the liquid as much as possible. The water with which the solution is made must be sterilized by being well boiled. The advantage of the plan is that it can be easily carried out by any medical man, as it is far less difficult than transfusion and less dangerous. DR. MÜNCHMEYER considers the plan so suitable for private midwifery practice that he suggests that a little apparatus, which is made on purpose for it, should always be carried in the obstetric bag, together with the proper quantity of common salt. Boiled water can always be procured, and this, when cooled down to the temperature of the body, 98.6° F., will do very well, though in the hospital he employs a more carefully sterilized solution.—*Lancet*, November 16, 1889.

Removal of Gunpowder Stains.—According to the *Peoria Medical Monthly*, stains produced by the explosion of gunpowder may be removed by first painting the skin with a solution of biniodide of ammonium in an equal part of distilled water, then with dilute hydrochloric acid.

Insufflation for Whooping-cough.—

Pulverized benzoin	. . .	10 grains.
Salicylate of bismuth	. . .	10 "
Sulphate of quinine	. . .	2 " —M.

A pinch of this may be insufflated into the nasal cavities every few hours.—*Lyon Médicale.*

Pills for Metrorrhagia.—

Pulverized ergot	75 grains.
Subcarbonate of iron	75 "
Sulphate of quinine	15 "
Extract of digitalis	7 "

Mix and make into fifty pills, of which two may be taken three times daily.—*L' Union Médicale*, Nov. 7, 1889.

Parasiticide Ointment.—

Salicylate of mercury	16 grains.
Vaseline	1 ounce.—M.

This makes not only an excellent ointment against the parasitic skin diseases, but against eczema, pityriasis, and syphilitic vegetations.—*L' Union Médicale*, Nov. 7, 1889.

Prescription for Toothache.—

Arsenious acid	15 grains.
Muriate of cocaine	15 "
Crystallized menthol	3½ "
Glycerin	2 drachms.—M.

A pledget of cotton moistened with this and placed in the cavity of the tooth will quickly check the pain.—*L' Union Médicale.*

Treatment of the Acute Stage of Eczema.—In the *Practitioner*, DR. MACKINTOSH makes some valuable suggestions on the treatment of eczema in the earlier stages. The first thing to insist upon is that the patient must not wash the affected part at all, though in eczema of the head and face the corners of the eyes and angles of the mouth may be touched lightly with a small piece of soft sponge made damp with cold water and immediately dabbed dry. Coffee, strong tea, and alcoholic drinks should be forbidden. The second essential is to keep the bowels freely open. In the case of children, mercury with chalk, rhubarb, and bicarbonate of sodium, a grain of each, taken as required every second or third night, will answer every purpose. In adults, salines hold the first rank, and sulphate of magnesium is by far the best of all purgatives. Three drachms should be taken an hour before breakfast, though it often acts as well if taken one hour before any other meal. The great desideratum is an appropriate external application, and the following acts in many cases with marked rapidity:

Subnitrate of bismuth	℥ij.
Oxide of zinc	℥ss.
Carbolic acid	♏ xij.
Glycerin	℥jss.
White vaseline	℥vj.—M.

If there are much tingling and irritation at night, the following will be found useful, applied with a camel's-hair brush:

Subnitrate of bismuth	℥j.
Carbolic acid	♏xij.
Glycerin	℥iv.
Rose water	℥iv.—M.

—*London Medical Recorder*, November 20, 1889.

The Treatment of Herpes Zoster.—DR. DUPAS, of Lille, recommends, for the abortive treatment of herpes, the application of ninety per cent. alcohol, or a solution either of two parts of resorcin, one part of thymol, three parts of menthol, or two parts of tannin, in one hundred parts of ninety per cent. alcohol. A compress should be saturated with one of the solutions, bound upon the diseased part, and covered with an impermeable material. The dressing should be frequently renewed. If either of the above solutions is painful, cocaine may be added. Under these applications the element of pain is diminished often in a few hours. If the disease has already reached the stage of suppuration, the vesico-pustules and pustules dry up rapidly, and no new ones appear.—*Journal of Cutaneous and Genito-Urinary Diseases*, December, 1889.

Solution for Blepharitis.—

Sulphate of zinc	15 grains.
Rose water	2 fluidounces.
Distilled water	5 " —M.

A compress of soft linen or a small sponge is to be soaked in this solution and placed over the affected eye. —*L' Union Médicale.*

Prescription for Acne.—

Naphthol	10 parts.
Precipitated sulphur	50 "
Lanolin	25 "
Green soap	25 " —M.

This should be thinly spread upon the skin, rubbed off in fifteen minutes, and the part dusted with talc.—*London Medical Recorder*, November 20, 1889.

Prescription for Scabies.—The following mixture is recommended as an efficient application in scabies:

Creolin	1 part.
Peruvian balsam	20 parts.

—*London Medical Recorder*, November 20, 1889.

The Treatment of Endometritis.—The local treatment usually adopted by Dr. Mundé in endometritis without hyperplasia of the mucous membrane is as follows: If necessary, the os is dilated; the cavity of the uterus is then thoroughly mopped with a 50 per cent. solution of chloride of zinc, the applicator being introduced several times in order that no portion of the endometrium may escape cauterization. A cotton plug covered with vaseline is then inserted into the uterine cavity, and an iodoform tampon placed over the cervix. After this the patient is put to bed, with an ice-bag upon the hypogastrium. In two days she is allowed to get up, the tampons are removed from the uterus and vagina, and lukewarm douches of a 2 per cent. carbolic solution given twice daily. In a week or ten days, the sloughs having separated from the endometrium, an application of chloride of zinc solution, 20 grains to the ounce, is again made to the cavity. The carbolized douches are continued, and when the discharge decreases in amount, gelatine-coated pencils, containing 5 grains each of iodoform and alum, are inserted into the uterus.—*Annals of Gynæcology*, November, 1889.

Iodoform Gauze in Post-partum Hemorrhage.—Dr. O. Piering, assistant in Prof. Schauta's obstetric clinic in Prague, has published his experience in the employment of Dührssen's plan of plugging the uterus with iodoform gauze for post-partum hemorrhage due to an atonic condition of the organ. Dührssen recommends that, when

post-partum hemorrhage comes on, the bladder should be emptied, and forcible friction, intra-uterine irrigation with hot or cold water, and hypodermatics of ergotin employed; that if the hemorrhage still continues, the cavity of the uterus should be filled with iodoform gauze, the irritation produced by this setting up active and permanent contraction. The method has, according to Dührssen, the advantages of great certainty, complete harmlessness and facility in its performance. Olshausen, Veit, and Tehling, however, say that the contraction set up is not always permanent, and that the method is not so free from danger as Dührssen believes. In consequence of these conflicting views, Dr. Piering resolved to give the method a trial, and he has recently detailed several cases in which it was employed with complete success. In no case was harm done by it. He advises that resort to the plug should not be too long delayed, and prophesies an important future for iodoform gauze in post-partum hemorrhage.—*Lancet*, Nov. 9, 1889.

Treatment of Tuberculosis of the Testicle.—DR. VERNEUIL, in the *Annales d' Orthopèdie*, states his belief that iodoform inhibits the development of tuberculosis, and his experience leads him to think that the removal of one testicle often gives an impetus to the disease, and causes it immediately to attack the other. He therefore reserves the extirpation of the testicles for cases in which the lesions are in an advanced stage. In less severe cases he prefers interstitial cauterizations, and searches for the nodules, which he pierces with a pointed thermo-cautery. Into the cavities thus produced he inserts a pencil of iodoform which is allowed to remain. He considers that this method of treatment gives satisfactory results, and rarely excites any increase of the diseased action. It also saves the testicle, or at least appears to do so, and many patients attach great importance to the preservation of their sexual organs. It is not uncommon for castration to be followed by suicidal ideas.—*Provincial Medical Journal*, November, 1889.

Bromoform in Whooping-cough.—DR. STEPP, of Nürnburg, publishes in the *Deutsche medizinische Wochenschrift* his results in the treatment of pertussis with bromoform. The drug has, according to the author, no ill effects, and his numerous observations have proved that, as used by him, it is non-poisonous, and that the pulse and temperature remain unaffected by it. Children are ordered from five to twenty drops during the twenty-four hours in very frequent doses. The solubility of bromoform in water being very slight, the mixture requires the addition of alcohol. Stepp has administered bromoform in about sixty-five cases of whooping-cough, the children ranging in age from six months to seven years. The longest time required for a complete cure was four weeks. Symptoms of pulmonary catarrh in all these cases were entirely absent, or else were slight and soon disappeared. No complications existed in any of the cases observed by the author, but Dr. Goldschmidt has treated several serious cases of whooping-cough complicated with pneumonia, completely curing them in a fortnight by the daily administration of bromoform. Dr. Stepp concludes from his observations that under bromoform treatment bronchial catarrh and lobular pneumonia do not generally occur, and that where they exist at the commencement of the treatment, resolution takes place at an earlier period than under other methods of treatment. His observations show also that the dose of bromoform must be in direct proportion to the severity of the affection and the age of the patient. The system does not seem to become accustomed to the drug, which has, moreover, considerable prophylactic power, so that the other children of a family in which whooping-cough in an advanced stage already exists can be shielded from the disease by being given bromoform. *Therapeutic Gazette*, November 15, 1889.

The Staining of Gonococci.—A useful method of staining gonococci, as described in the *Medical Press and Circular*, is as follows: "After the cover-glass is spread with a thin layer of the suspected substance, it is passed three times through a flame. It is then allowed to remain from five to ten minutes in a saturated solution of methyl-blue in carbolized water, after which it is washed in pure water, and dipped for a moment in a weak solution of acetic acid (dilute acetic acid five minims; distilled water five and a half drachms), and again washed in water. As the acetic-acid solution decolorizes other organisms more rapidly than the gonococci, the latter will remain a distinct blue.—*Medical Record*, November 23, 1889.

Chloroform Water in Whooping-cough.—DR. SCHILLING has recently treated sixty-one cases of whooping-cough with inhalations of chloroform water, after the method of Salkowski, his results being excellent. The patients varied in age from ten weeks to twelve years. His methods and results are thus described: Into the boiler of a steam atomizer is placed one tablespoonful of water to which are added two drops of pure chloroform for each year of the child's age. The inhalations are practised four times daily, each inhalation being continued until the solution is entirely vaporized. If there is no improvement by the eighth day, the chloroform is increased to three drops for each year of the patient. In most cases the disease ceases to progress after a few days of treatment, and by the eighth day the patient begins to improve. Nearly one-half of his cases lost the convulsive element of the disease in about two weeks, or, more accurately, four cases terminated favorably in one week, twenty-eight in two weeks, twenty-one in three weeks, and eight in four weeks. His former experiments with inhalations of carbolic acid gave much less satisfactory results. Antipyrin he has found of use in some cases but valueless in many more.—*Therap. Monatshefte*, October, 1889.

Explosive Mixtures.—PROFESSOR ROBERT calls attention to the following explosive mixtures: Chlorate of potash mixed with charcoal dentifrice powder may explode, even in the mouth. Chlorate of potash mixed with catechu, or with tannin, explodes with friction, even if glycerin is added. Chlorate of potash and phosphate of sodium explode while mixing the powder. One part of chromic acid mixed with two parts of glycerin explodes immediately. Iodine and ammonia should never be mixed together, as they are extremely apt to explode. Bromine and alcohol, forming the bromide of ethyl, often explode. Picric acid, reduced to powder, explodes when mixed with any other substance.—*Weekly Medical Review*, November 16, 1889.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

Address the Editor: H. A. HARE, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, including Postage.

PER ANNUM, IN ADVANCE . . . . . $5 00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, DECEMBER 14, 1889.

THE CO-EDUCATION OF THE SEXES.

WE present to our readers in the present number of THE NEWS the carefully thought-out opinions of several eminent gynecologists and neurologists upon this important subject. These expressions of opinion have been obtained in response to a series of questions; they therefore contain the views of the writers arranged in a systematic manner, and nearly in parallel lines of treatment. But the conclusions are strangely at variance. They represent, in point of fact, every shade of opinion from a reasonable advocacy, through hesitating and qualified endorsement, to strenuous opposition. As the subject is, in its present phase and notwithstanding much tentative work already done, a new one to many earnest thinkers, this want of agreement among men well qualified by professional training and broad experience to discuss it, is of peculiar value as indicating the necessity for deliberate consideration on the part of those now active in the movement in favor of co-education in institutions devoted to the higher general and technical training. It shows that there is much to be honestly said upon both sides of the question. Bitter partisanship in a cause like this is, on the one hand, a waste of energy; while, on the other, a narrow conservatism cannot long retard, much less arrest, the progress of that social evolution which to-day leads the van of civilization. What is now most needed, is reform within educational institutions; the elimination of injurious traditional methods, such as the cramming system, competitive examination, grinding routine which neither recognizes nor makes allowances for differences of capacity and temperament among students, and the bettering of the means by which the student and the instructor may be brought into closer personal relationship, with the advantage to the former of having that which is best in him developed, and that which is wrong set right, and to the latter the advantage of doing work of a high order, instead of perfunctory drudgery. This means education as a fine art. It is coming to take the place of older methods at higher levels, just as at the lower the kindergarten system has replaced the *a, b, ab's* and the dunce-cap, and technical schools for artisans the apprentice system. The education which makes allowance is not so hard for women as compared with men, as the present system is for the feebler man as compared with his sturdier and more phlegmatic fellow. Our experience in the higher education of woman is, as yet, too limited to warrant positive conclusions as to its effects upon the mental and bodily health. It is, however, increasing steadily, and the facts now appear to be in favor of the view that there is nothing in thorough training, properly conducted, that is of itself adverse to the highest physical well-being of either sex. If that training is to be given women side by side with men, it will necessitate numerous readjustments of existing educational methods, readjustments that will rebound to the advantage of all concerned.

SPECIAL ARTICLE.

CO-EDUCATION AND THE HIGHER EDUCATION OF WOMEN.

A Symposium.

BY PROFESSORS WILLIAM GOODELL, M.D., T. GAILLARD THOMAS, M.D., JAMES R. CHADWICK, M.D., S. WEIR MITCHELL, M.D., M. ALLEN STARR, M.D., AND J. J. PUTNAM, M.D.

THE subject of co-education and the higher education of women is just at present attracting so much attention in this country and abroad from a purely educational point of view but with utter disregard to the physical side of the question and the systemic influences exerted thereby, that we have thought a symposium of the opinions of medical men, eminent in their special lines of work, of importance and interest. Importance because of the effects upon

the well-being of the community both moral and physical, and interesting because the experiment is being so widely tried at present at Harvard, Columbia College, the University of Pennsylvania, and other centres of learning, as well as those institutions especially devoted to the female sex, such as the Vassar, Wellesley, and Smith colleges.

The opinions given have been based upon the following outlines:

Gynecologists.—In your opinion, does the higher education of women produce changes in the general or generative system of sufficient frequency or magnitude to lead you to disapprove of movements looking to improved mental training in females?

Do you think that co-education is worse for women than separate teaching methods, either by reason of the danger of excessive competition or other causes?

Do you think that far advanced intellectual training interferes with childbearing, directly or indirectly?

What troubles have you found produced, so far as the uterus and ovaries are concerned, in women from such endeavors?

Man for woman, do you think the average girl going to college will come out as mentally and physically active as the average man?

Neurologists.—In your opinion, does the higher education of woman, that is, a college training, produce changes in the nervous system of sufficient gravity to make the general application of such a course a procedure in any way productive of evil results to the sex?

Do you think women are qualified to imbibe the same amount of knowledge as men with no more expenditure of nerve force than men?

What maladies have you seen more frequently in females, as a result of hard study, than you have in males?

Do you think that co-education is advisable from the standpoint of a neurologist?

Man for woman, do you think the average girl going to college will come out as mentally and physically active as the average man?

Mr. Editor: Your five questions, short as they are, need for answers at least as many essays, and long ones, too; but as you ask merely for "opinions," I shall try to give mine categorically, and as briefly as possible:

1st. There is no question that many women, perhaps, indeed, most women, are intellectually fully as capable as men for higher mental culture. But such advanced education means prolonged education, and herein lies the danger. In young women prolonged confinement, prolonged brain-work, and prolonged intellectual rivalry are, in my experience, injurious to physical and sexual development.

The chief strain of reproducing the species falls on woman, and her share in this cardinal matter is complex, while man's share is single and simple. To this end she ovulates, she menstruates, and she conceives. For this end she bears the burden of gestation, of parturition, of lactation, and of maternity. For this great end she needs the utmost perfection of physical development. Therefore the growth and the well-being of her body should be, at least, as carefully looked after as the growth and well-being of her mind. It should be a co-education of body and mind, the one helpful to the other. But this *junctura callida*, this important harmony, is not well observed in female education, and our boarding-schools, public schools and female colleges are liable to become the hotbeds of forced and sickly girls. As a result, the chief skill of the milliner seems to be directed toward concealing the lack of organs needful alike to beauty and to maternity, and the cultured girl of to-day becomes the invalid mother or the barren wife of to-morrow, or she has all the natural human instincts partly, or indeed wholly, educated out of her. So commonly do I find ill health associated with brilliant scholarship, so often that she who wins an honor is a "victor who hath lost in gain," that one of the first questions I put to a young lady seeking my advice is: "Did you stand high at school?" At the present moment I have in my private hospital one such example: a girl of brilliant mind, whose previously rude health has been grievously injured by overtaxing her brain at one of our best female colleges. Nor is this case a single one. I have had many such; at one time, three ladies from the same college were in my hands.

Whether the fault lies more in the mode of education than in its quality, is yet to me in a measure an open question. But I cannot withhold the opinion that woman's dress must also play an important part in this result. Given one hundred young men "cribbed, cabined and confined" in corsets, or in the tightly fitting clothing which women ordinarily wear; to say nothing of several skirts hanging from the waist; and given one hundred young men clad in the every-day masculine attire, which is a blouse when compared with a lady's dress; which hundred, think you, Mr. Editor, would pass the less unscathed in health through a four years' curriculum at college, supplemented by a three years' professional curriculum?

Of course the monthly drain upon the system, together with its accompanying pains and lassitude, must also have its effect upon the female student. But I shall touch more at length on this factor a little later.

2d. For reasons which, perhaps, may be more sentimental than sound, I, personally, am opposed to the co-education of the sexes. Yet I am bound to confess that it seems to work well in those Quaker institutions with which I am familiar. It certainly does succeed in bringing about close attachments between the sexes, which often end in early marriages.

3d. I believe that in young, developing women, "far advanced intellectual training," as it is now imparted, does interfere not only with conception, but also with childbearing. For, of course, if I am right in my first answer, whatever stunts and enfeebles the frame, must interfere with one of the chief requirements of that fame. To the present system of education do I attribute much of the sterility and the infecundity of women, the absence of sexual feeling, the aversion to maternity, the too often lingering convalescence from a first labor, which is frequently the only one, and the very common inability to suckle their offspring.

I have sometimes been led to think that over brain-work tends not only to stunt the body and to contract the pelvis, but, by the law of evolution, to develop bigger headed offspring, or at least offspring with heads relatively disproportioned to the pelvis of the mother. But perhaps this opinion belongs to the domain of transcendental medicine, and has no sound empirical basis for its support. I merely throw it out as a hint for others to work out.

4th. Before you, Mr. Editor, had asked me to answer your five questions I wrote a paper which appeared in the last issue of your journal. In it are remarks so pat to this, your fourth question, that I shall take the liberty of quoting them:

"By breaking down the nervous system the brain-cramming, the intellectual rivalry, the buckram, proprieties, and the unwholesome confinement of our boarding-schools and public schools, breed a host of sickly girls, who swarm in every class of society. Manifold diseases, both functional and structural, date from the recitation room. They are mostly of a uterine complexion, for at that time of life the sexual sphere dominates, and the brunt of the nervous and the vascular disturbances which form the essence of nerve-exhaustion, falls on the most exacting organs—the reproductive. Hence these suffer from neuralgic pains, or from congestion and the lesions coming from prolonged congestion." . . . . "So common is it for girls in boarding-schools to suffer either from amenorrhœa or from irregular menstruation, as to create a general impression in the community that in these schools some drug is secretly given in the food in order to lessen the laundry work. In one school of great repute so many girls missed their monthly periods, that the family physician of several of them wrote to me asking whether it were possible, as his patients averred, 'that, as their clothes were laundried in the building, something was given in their food or in their drink to produce the effect, for the purpose of saving the laundress the disagreeable task of washing the napkins.' My reply was that if laundresses were acquainted with a drug that could arrest menstruation they knew more than the profession, and that his patients had lost their monthly periods—not from secret drugs, but—from loss of health, due to an unwholesome system of education."

In fact, the most common sexual disorders which I find in female students are menstrual derangements—viz., suppressed, irregular, or scant menstruation; occasionally profuse, and very frequently painful menstruation.

The next most frequent sexual troubles are spinal irritation, leucorrhœa, irritable bladder, pruritus vulvæ, painful ovaries, a bearing-down feeling, and various pelvic aches and congestions. But most of the so-called uterine symptoms are the protean ones of nerve-exhaustion, which is, after all, the bottom factor of the ill health of these girls, the uterine lesions being secondary.

5th. My previous remarks, Mr. Editor, should cover your fifth question. But, since you ask for a categorical answer, let me give you one: Without wishing to wear an illustration threadbare, let us compare the average male student with the average female student. Let us consider that in addition to the clogs and trammels of her dress she has, for several days in every lunar month, to forego her daily bath, to curtail her customary exercise, and to lose some ounces of blood, because she is "*unwell*"—as women from their feelings and sensations aptly call themselves at such times. She, then, will be nervous and irritable, perhaps hysterical, and, most probably, worn out by headache, backache, or groinaches, and oppressed with great lassitude. Yet, for all that, if she has a spark of ambition—and I take it that the average girl has—she must go on with her studies to keep up with her class. Now, I leave it to your common sense, Mr. Editor, and to the common sense of the many readers of your excellent journal, which one would come out of a four years' curriculum the more "mentally and physically active." Would it be the female student, handicapped by her dress and her monthly periods? or the male student, unhampered by female panoply or by monthly flux?

Yours truly,

WILLIAM GOODELL, M. D.

Gynecologists.—In regard to the first question my reply is: No, it does not, by any means. A certain number of women are so organized, physically and mentally, as to render them incapable of undergoing

the training which attaches to the higher order of education exactly as a certain number of race-horses are incapable of undergoing the training to fit them for their work; or as a certain number of prize-fighters are incapable of undergoing the training which would make them able to perform the antics of the prize ring. As a general rule, I would answer the question in this way: I do not think that the higher education of women produces changes in the general or generative systems of sufficient frequency or magnitude to lead me to disapprove of movements looking to improved mental training in females.

I see no great danger connected with co-education, when properly conducted, either for women or for men.

No. In very exceptional cases far advanced intellectual training might do so. As a general rule, I feel sure that it does not.

In the exceptional cases mentioned I find a tendency to irregular ovulation; to painful menstruation, to nervous disorder, and to consequent blood impoverishment; but, as before stated, such results are very exceptional. T. GAILLARD THOMAS.

It is my opinion that the highest education of women tends to improve their general health, and consequently their capacity for childbearing, in that it develops the reasoning powers at the expense of the emotions, and thus gives them greater power to keep the latter in proper subjection. It matures their judgment, thus rendering them more reasonable and prudent in the various relations of life.

It gives them—especially if the higher education leads, as it should, to definite careers in life other than matrimony—spheres of interest extraneous to their own bodies or personal affairs.

These opinions, based upon *à priori* considerations and personal experience in a medical practice exclusively among women, receive partial corroboration from the meagre health statistics of women graduates as yet available. Carroll D. Wright has shown[1] that among 705 female graduates of colleges "20 per cent. show a deterioration in health, 60 per cent. no change, and 20 per cent. an improvement." From these and other figures he concludes that they "do not seem to show, as the result of their college studies and duties, any marked difference in general health from the average health likely to be reported by an equal number of women engaged in other kinds of work."

So far as I know, there are no sufficient statistics as to the health of women after graduation, but if knowledge and trained understanding are of any value to men in fitting them to lead more healthful lives, as is universally admitted, how much more important is it likely to be to women! A development of the reasoning powers in women will, I believe, make women healthier through life, render them wiser in the care and education of their children, and fit them more fully to be in companionship with husbands and with men generally.

I see no great danger of excessive competition between the sexes in colleges conducting co-education, but if it were to arise, I think it would be averted by the skilled supervision now exercised over the health of students in many colleges, which should be introduced in all.

As Dr. Mary Putnam Jacobi shows[1] "that in our existing social conditions, 46 per cent. of women suffer more or less at menstruation," it is evident that in a system of co-education women are handicapped by the manifest necessity of abstaining from severe or sustained mental work for several days in every month. How provision can be made to meet this physical necessity without overtaxing girls during the rest of the month is not clear. Yet no evidence of this detriment to girls in any of the colleges, in which co-education prevails, has yet been made public, and it is evident that the same or even greater danger exists in the last two or three years of the course in the preparatory schools, when the menstrual function is being established.[2]

For these reasons I am in doubt as to the expediency of co-education in colleges.

I have no conclusive evidence that a specially intellectual training has any influence upon childbearing, either directly or indirectly, but my impressions are that it is rather favorable than otherwise.

I have not found any prejudicial influences exerted directly upon the uterus or ovaries by study, and only indirectly, in participation with the derangements of the general system, where the study has been irrational or excessive.

I think it fairly established by experience, so far as it has accumulated, that the average girl, on graduating, is as active, mentally and physically, as the average man, though not as strong muscularly.

JAMES R. CHADWICK.

Neurologists.—I beg leave to answer these questions without reference to their order. I merely state, without defence, what I think on this weighty subject. Elsewhere, in three books,[3] I have said my

[1] Sixteenth Annual Report of the Massachusetts Bureau of Statistics of Labor.

[1] The Question of Rest for Women during Menstruation. New York, 1877, p. 232.

[2] I have shown in the North American Review for December, 1882, that the average age of first menstruation in Americans is fourteen years, four months, and five days.

[3] Wear and Tear, or Hints for the Overworked. Lectures on Nervous Diseases; Doctor and Patient.

say, and, save as to one point, have said it in full. As to this one, I can in a medical journal speak with frankness and ease; in secular journals no one can do justice to this subject.

I think that women would be better in many ways for the higher education, if it come late enough. I believe that they have a right to it, if they ask for it, just as they have the human right to study medicine or law, irrespective of what men may think of their fitness to practise either.

I do *not* believe that constant hard study is as free from evil for the woman as for the man. She is less fit for competitions than man, and her more emotional nature, which qualifies in some directions, in a measure disqualifies in others. I speak now of the average woman. I believe that selected women will stand the stress of continuous intellectual work; for the mass it is dangerous, and, probably, in the long run, sexually incapacitative to a varying amount. The male, overworked and worried, suffers a variety of neurasthenic breakdowns; the woman overworked, or too continuously worked, with the addition of the emotional distresses or excitements to which her nature more largely subjects her, is more liable than he to hysteria, or hysterical hypochondriasis, as well as to neurasthenia.

Your final question is difficult. I believe that of one hundred boys who study hard and well and live the average college life, fewer will be hurt than will be of one hundred women of like age and under like conditions. The reasons for this belief I have given elsewhere.

It is fair to say, however, that at many of the girl-colleges, of late years, a fortunate proportion idle along, or, like many boys, take it easy. Then the statistics are worthless. All concerned are tacitly pledged to accept and defend the man standard of work, and so it is hard to know the full truth. What I believe rests on cases I have seen and what they have told me, and concerning these I have long since said my say.

I reserve No. 4 for the last. I do not believe in co-education, and would abolish it if I could.

The sexes run along in childhood intellectually, not very far apart. At from thirteen to sixteen the girl becomes more decisively the woman than does the boy become a man; more serious, more conscientious, and more suddenly a complete being. The female, for reasons moral and developmental, up to a certain time, surpasses him in intellectual quickness and in power to acquire knowledge. I speak now of groups of either sex who are in reasonable earnest. Somewhere after twenty (no one can set an exact date) the average man increasingly surpasses the woman in persistent energy. Her defect as to this exists from puberty, but is emphasized in her contests with man when he acquires manhood's motives for constant labor, and puts out his strength. I think it unfair to both sexes to bring them into mental competition.

I believe co-education abominable for many reasons, but, for physiological reasons, I think it foolish and absurd; as for others, I think it needless. You put a woman—a girl—in a class with men—or lads. Her wants and her menstrual disabilities she is forced by modesty to hide, or control, or defy. If in women's colleges the silently accepted standard of health and endurance is that of man, how must it be where the groups are of both sexes, and the effects of shame are intensified by the fear of a masculine smile.

I have put all this tersely, as was needed. It is hard to do justice, however, in such brief compass. We speak from the standpoint of the male physiologist. We know the evil, but we do not enough see how painfully stringent are the motives which urge the woman into competitions she is unfit for. The higher education is her right, in some sense, and let us do all that is possible to relieve it of what makes it hurtful to so many.

As to co-education, it seems to me utterly wrong. If any one supposes the curve of endurance as to intellectual labor does not drop with the menstrual period below the continuity of the male capacity, they can know very little of women. If any one believes that ambitious girls put in competition with boys are not thus influenced to disregard in their eagerness the monthly reminder of possible motherhood, and, too, some other matters, they can know little of human nature.

We have been presumbly discussing sexual groups of healthy people, but it is a sad fact that the standard of health in young men and women, taken in the mass, is sadly different. Of 100 average girls between the ages of fourteen and twenty, far more will be ailing than is the case among 100 average lads of like years. This is a matter which the physican, at least, cannot disregard in discussing education in relation to health; but as to this I have also written much, and let those who doubt the conclusions reached read what I do not care to repeat here, or let them study the papers of Romanes, Mrs. Lynn Linton, and Dr. Edward Clarke.

S. WEIR MITCHELL, M.D.

A higher education, that is to say, a college training, if properly pursued, does not seem to me in any way productive of evil results to either sex. On the contrary, by stimulating mental activities; by opening up new intellectual interests; by broadening individual experiences and views of life, it is decidedly advantageous to both sexes equally. The demand everywhere made at present is that woman shall be companionable to man, and this can be

possible only when the range of mental activity in both is on a common plane, an end to be best attained by opening to both the same educational facilities, and encouraging their pursuit. Girls devote so little time to culture after leaving school that the better their education is at the outset the better for the girl in the end.

Given a man and woman of equal natural abilities, I think there will be very little difference in the amount of knowledge imbibed under the same circumstances with similar expenditures of nerve force. The rapidity of observation may be even greater in the case of woman, as has been shown by certain investigations regarding the personal equation. In respect to the kinds of knowledge which are derived from observation it is possible, therefore, that the woman would have the advantage. But in respect to the power of continuous attention it is my impression that man would have the advantage. Observations upon general audiences have shown that there is more apparent inattention on the part of women, even when interested in the subject being presented, whether music, play, lecture or sermon; and since for imbibing the highest kinds of knowledge close attention is requisite, man might have the advantage here.

I do not think that hard study is a frequent cause of disease. It is the anxiety attendant upon close competition. It is the emotional strain in connection with efforts to attain success, rather than the study alone, which is the usual cause of nervous prostration. If competition can be eliminated in education the process could never be accused of producing disease. Fear of failure in examinations, eager desire to excel in competing for honors or position, or prizes, and the attendant emotional strain, is, in my opinion, the chief cause of maladies usually ascribed to over-study. Under such emotional strain I think women give out more quickly than men, and from the effects they recover more slowly. This I should not be willing to ascribe entirely to inherent weakness on the part of the nervous system of women, but, in part, to their very common neglect of the many precautions which prevent such a break-down. I refer to proper diet, sufficient exercise, a careful regulation of digestion, and the relaxation from continuous work which should be enforced at certain periods.

I do not think co-education is advisable, because it increases the amount of competition in study. Some women can compete successfully with men, but in every college where co-education exists the number of men is much larger than that of women, and hence the probability is that there will be several men of talent for every woman of talent. In all these colleges the competition will be greater for the women than in the colleges limited to her own sex. The stimulus to competition will also be greater than in a woman's college, for a talented, ambitious girl will try the harder to surpass her competitors if they are men. Hence, for the girls of ability, the nervous strain of co-education is likely to be too great for their good. For girls of no special ability, who have to be forced to study, the opportunities for social diversion in a college for both sexes are so great as to interfere to some extent with their study and tend to distract their attention from their work. Lastly, in a girl's college, allowances for illness will be more readily made and more freely demanded by the girls than in a co-educational institution. While I believe, therefore, in opening a college education for women, I believe it should not be on the co-educational plan.

I see no reason whatever why mental and physical activity should be impaired in a girl's college, and I think the college girl will come out as strong as the average man in these and other respects.

M. ALLEN STARR, M.D.

I interpret the first question as asking whether the injurious effects of college life, as regards health, overbalance the beneficial effects, and in replying shall consider: 1, to what influences women who seek a higher education are exposed, for good and for evil; 2, how women may be classified in relation to these influences; and what would be the effect of the "general application" of such an education.

Statistics as to the effects of a collegiate course upon the health of women, based on sufficient numbers to be of value, exist, so far as I know, only in the report of the Special Committee of the Association of Collegiate Alumnæ,[1] adopted as a part of the Sixteenth Annual Report of the Massachusetts Bureau of Statistics of Labor.

This gives information concerning the health of 705 students before, during, and for a number of years after their college course.

It appears that the majority of the students kept the good or fair health with which they entered college, and that almost the entire 705 had led active and useful lives since graduation; the greater part being engaged in the exacting labor of teaching.

I believe the principal causes of ill-health met with in women's colleges, to be, anxiety about outside matters, mainly concerning home affairs; emotional excitement attending severe or prolonged study of competition for honors; and the physical strain of overwork.

Another unfavorable influence is, that the students—who have thus far been almost entirely of a peculiarly zealous and ambitious type—often stimu-

[1] Boston, 1885.

late each other to a degree that creates an atmosphere of nervous tension.

As regards this danger, the colleges would doubtless gain by the admission of more pupils of the class who would go rather as a matter of course, and who would not feel that they had so much at stake, as do the more serious and over-eager students of the earlier and present days.

For similar reasons, women in co-educational colleges gain through contact with their more phlegmatic associates.

Lastly, inattention to hygienic matters is an important cause of ill-health, but in this respect women's colleges are steadily improving and are likely to reach a high standard of excellence.

At many of them, as at Wellesley, a certain amount of physical exercise is prescribed, and at one college[1] an examination in this branch is required for a degree.

In deciding to what extent these influences are liable to be injurious, it is advantageous to classify the students.

There is one large class who are amply strong enough to perform their college duties, and as well equipped as their male colleagues for receiving and transmitting further the many ennobling influences of college life.

Then, there is a smaller class who are so handicapped by constitutional weakness or external conditions, that they are very likely to lose their health in attempting to do college work.

Finally, there is a large number who are liable to break down under college strains, just as they are liable to break down from hosts of other strains. Quick and ambitious, but over-sensitive and introspective, they form the neurasthenic class, and the study of the effects of college life upon them is of especial interest to the physician.

I believe that there are many young women of this temperament, and, also, many who would otherwise lead aimless lives at home, who would be safer, both at the time and afterward, for the sobering and bracing effect of a well-governed, wide-awake college, where they might be trained in such a way that they would be enabled to take an effective part in the world outside, or the world of their own homes.

Every physician who has to give advice to neurasthenic patients often seeks for them many of the very influences that the college should, and to a considerable extent does offer—a well-ordered routine as a substitute for an irregular series of fatiguing and listless efforts, mental and practical work to offset emotional excitability, respect for industry and accomplishment, belief in the power of training, a safe introduction to a broadening circle of interests.

It is a noteworthy fact that the question is rarely asked, except *apropos* of athletics, how the health of men is affected by their college life. It is taken for granted (and I believe correctly), that the four college years are, what they were intended to be, a period peculiarly favorable to the orderly, systematic development of mind and body, and those who fall out are assumed to have been weakly at the start, or to have acted with unusual folly.

I believe that when the idea becomes more familiar, a similar training, properly adapted to their needs, will be considered equally good for women.

Women are constantly doing more and better work in education, in the public charities, in certain of the professions, and even in municipal politics, and the alternative for them is to exercise faculties which have been strengthened by prolonged and systematic training, or, for the lack of such training, to work under a pressure that is a serious strain upon the health.

In regard to the question, "Do you think that co-education is advisable from the standpoint of a neurologist?" I may state that while I am not prepared to advocate collegiate co-education as a general system, yet I think it presents more advantages and fewer objections than are generally recognized. It has the merit of economy, simplicity, and accordance with American habits of social life, which, in most respects, have proved to work so well.

J. J. PUTNAM, M.D.

[1] The Women's College of Baltimore.

REVIEWS.

A CLINICAL ATLAS OF VENEREAL AND SKIN DISEASES. By ROBERT W. TAYLOR, A.M., M.D., Surgeon to Charity Hospital, New York; Late President of the American Dermatological Association, etc. Illustrated with 192 Figures and 48 beautifully colored Plates, etc. Parts VII., VIII. Philadelphia: Lea Brothers & Co., 1889.

THE completion of this monumental work is a subject of congratulation, not only to the author and publishers, but to the profession at large; indeed, it is to the latter that it directly appeals as a wonderfully clear exposition of a confessedly difficult branch of medicine. It sometimes happens in such enterprises that there is a glaring disproportion between the component parts of the work; that is to say, the text may be good and the illustrations poor, or the reverse may occur. In this instance, however, good literature has joined hands with good art with highly satisfactory results for both. It is scarcely necessary to make any extended review of the Atlas as a whole, since the separate parts have been duly noticed at the time of publication, but for the benefit of those who may be unaware of the general scope of the work some idea of the plan pursued in its composition may not be unwelcome.

There are altogether one hundred and ninety-two figures, many of which are life-size, and representing the highest perfection of the chromo-lithographic art, and scattered throughout the text are innumerable engravings. Quite a proportion of these illustrations are from the author's own collection, while on the other hand the best atlases of the world have been drawn upon for the most typical and successful pictures of the many different types of skin and venereal disease. We think we may say without undue exaggeration that the reproductions, both in color and in black and white, are almost invariably successful.

The text is practical, full of therapeutical suggestions, and the clinical accounts of disease are clear and incisive. We remember once to have read an article in the *American Journal of the Medical Sciences*, by the late Dr. Bumstead, in which he stated that the syphilographer was never a good dermatologist and *vice versa*, and we believe that he himself made little claim to a knowledge of cutaneous medicine. His own immediate successor and co-laborer is, however, an apt illustration to the contrary. Dr. Taylor is, happily, an eminent authority in both departments, and we find as a consequence that the two divisions of this work possess an equal scientific and literary merit. The last two, and concluding, parts illustrate skin diseases. The two most notable subjects treated of are xeroderma pigmentosum and lichen ruber and planus, both of which embody pictorially and otherwise a large amount of original work of permanent value and interest. The investigations of the author on the subject of xeroderma pigmentosum have long been known to dermatologists, and here, after a series of years spent in the observation of certain cases, we are finally presented with his completed and matured conclusions. The identity or non-identity of lichen planus and ruber has been and is a *questio vexata* among the best authorities, and we are glad to be able to say that in the pages before us, rich in illustration and comment, a considerable step has been taken toward its solution. We must certainly stand with the author in his belief that the two affections are entirely dissimilar.

We have already passed the limits allotted to a notice of this kind, and while we have nothing but praise for this admirable atlas, it must be said in justification that it is more than warranted by the merits of the work itself.

CORRESPONDENCE.

NEW YORK.

(*From our Special Correspondent.*)

To the Editor of The Medical News,

Sir: The Sanitary Aid Society of this city, which during the last few years has been engaged in excellent practical philanthropy, has just opened a new night lodging-house on Division Street, in the heart of a crowded down-town tenement-house district, which is a model structure of its kind, unsurpassed by any similar institution in the country. It is five stories in height, four stories being devoted to dormitories, and offers every necessary comfort to lodgers. It can accommodate 110 inmates nightly, and for the sum of ten cents it furnishes each one with a clean bed, a night-shirt, a bath, a separate locker for clothing, and, if desired, a cup of coffee and a roll in the morning. The building has all the modern improvements in plumbing, ventilation, and closets, and is provided with iron stairs and fire-escapes, both front and rear.

The Sanitary Aid Society has been in existence only since 1885, but during that time it has furnished lodgings to more than 130,000 people, while it now has accommodations for 50,000 per annum. At the time of its organization it was deemed best to concentrate its efforts on some special district, as, with the limited pecuniary resources at its command, it would have been useless to attempt sanitary reforms in every part of the city; accordingly, it selected as the field where such reforms were most needed the Tenth Ward, where there was a population of 50,000 souls to but 1859 houses. The Society undertook an exhaustive investigation of the condition of these houses, and as an instance of the over-crowding discovered, it was ascertained that 258 human beings continuously resided on one lot twenty-five by ninety-five feet, containing a front and rear building. A campaign of reform was instituted, and a canvass from house to house, and from room to room, was made. The result was, that, by the following May, 300 of the worst houses had been cleaned out, a systematic work of cleansing, repairing, and drainage had been organized among landlords, lessees, and tenants, and twenty additional sanitary inspectors had been added by the Board of Health to its working force. In addition, a night lodging-house was built on sanitary principles, which for the past four years has been doing excellent work. In order to appreciate the benefits of these model institutions provided by the Sanitary Aid Society, it is only necessary to compare them with the ordinary cheap lodging-houses in the lower part of the city, among which, notwithstanding the strict surveillance maintained by the health authorities, several outbreaks of typhus fever have occurred in recent years.

Diphtheria is becoming increasingly prevalent in Brooklyn, and the records show that during the eleven weeks ending November 9th, there were 192 deaths from the disease, as against 118 during the corresponding period last year, and that with the exception of the last week in October, there has been a weekly increase in mortality over that of 1888. No special cause has been assigned for the prevalence of the disease, but there can be little doubt that it is very often contracted by children coming in contact at school with light cases of diphtheria, or with other children from infected houses. There is also good ground for the opinion held by some authorities, among whom is Dr. J. Lewis Smith, that the germs of diphtheria, having once been introduced into the sewers of large cities, meet there with conditions favorable to their development and multiplication, independent of the human subject; so that wherever the emanations from the sewers enter a dwelling they are liable to carry the specific virus of this disease.

Dr. Henry H. Duncan, a ship-surgeon in the service of the Pacific Mail Company, has brought suit to recover $60,000 damages from the city of Brooklyn. While on board the steamer "Colon," on his way to this port in June last, he was taken with remittent fever, and after arrival went to stay at the house of a friend, Captain Thompson, in Brooklyn. He claims that when already recovering, the report having been circulated that he was suffering

from yellow fever, the Brooklyn health officials decided that he had this disease, notwithstanding that Dr. Cyrus Edson, Chief of the Bureau of Contagious Diseases, New York Board of Health; Dr. Smith, Health Officer of the Port, and others, expressed a contrary opinion. Consequently, he was taken from the house at midnight, and sent on a tugboat to Swinburne Island, in the harbor. His treatment, he says in his complaint, was rough and unskilful, and would, if he had really been suffering from yellow fever, have caused his death. The vehicle which carried him to the dock was not an ambulance, but an old patrol wagon without springs; and while on the way to Swinburne Island he was kept on deck and exposed to the damp air. At the Island he was kept practically in solitary confinement, without proper food or treatment. Moreover, Dr. Bogart, his attending physician at the time of removal, was detained by force in Captain Thompson's house for several days.

The necessity for greater care in the examination of "drunk" patients than is usually observed at our hospitals is well illustrated in the case of a man who was recently found intoxicated on Broadway and arrested. At the station-house he told a story of having been stabbed in the eye with an umbrella. The wound was not regarded by the police as sufficiently serious to call for medical attendance, but the next morning his condition was such that he was sent to the New York Hospital, where he was treated for acute alcoholism and lacerated wound of the face. The next day he was transferred to Bellevue Hospital, where he improved for a number of days, but subsequently developed symptoms of cerebral inflammation and died. Autopsy showed that some instrument had been thrust through the inner angle of the eye to the base of the skull, injuring the optic nerve and fracturing the sella turcica.

The Hon. Andrew D. Smith, ex-president of Cornell University, who has just returned from an extended foreign tour, makes a comparison of Constantinople with New York, which is not very flattering to the citizens of the latter place. "Constantinople, throned upon the most magnificent site for a city on the globe," he says, "is in all its recent civic buildings and its general municipal system vile. I know of but one other city which can be classed with it in these respects. As I went through its muddy, badly paved lower streets, saw the evidence of bad sewerage everywhere, and looked upon its tumble-down quays, it all fairly made me homesick—they resembled so strongly those of our own city of New York. As a simple matter of fact, those districts in New York, somewhat remote from the main avenues and centres, have the vilest arrangements I have ever seen in any part of the world, with the possible exception of Constantinople." That there is unfortunately a great deal of truth in these remarks, is attested by the fact that only during the past week a committee of the State Senate has been making a personal investigation of the Twenty-third and Twenty-fourth Wards, in the annexed district beyond the Harlem, and listening to complaints and evidence as to bad streets, drainage and sewerage.

The seventh congress of the American Ornithologists' Union has recently been in session at the building of the American Museum of Natural History, and the proceedings were often of considerable general interest. A number of physicians from different parts of the country were in attendance, and reports on the Migration and Geographical Distribution of Birds, and on the Anatomy of Birds, were read respectively by Dr. C. H. Merriam, Chief of the Division of Ornithology and Mammalogy in the Department of Agriculture, and Dr. Robert Shufelt, U. S. A., of Fort Wingate, New Mexico. Among other papers read was one on the Avifauna of Arizona, by Dr. E. A. Mearns, U. S. A., of Fort Snelling, Minnesota.

Last season the College of Physicians and Surgeons sustained the loss of its president, Dr. Dalton, and a number of its faculty, Drs. Sands, Sabine, and Agnew; all these distinguished members of the profession dying within a comparatively few months of each other. This season it is Bellevue College that suffers the loss of its president and founder, Dr. Isaac E. Taylor, which has followed rapidly upon the death of Professor Alexander B. Mott.

The report of the president of the trustees of the House of Rest for Consumptives, presented at the annual meeting of the board, which was held November 15, shows that one hundred and sixty-four patients have been treated in the institution during the past year, of whom eight were discharged cured and thirty-one improved. The gratifying results thus reported are due in a measure to the improved methods now employed in the treatment of phthisis, and the trustees hope soon to increase further the facilities for scientific management.

The new Christ Hospital, of Jersey City, erected under the auspices of the Abercrombie Guild of St. Matthew's Episcopal Church, was formally dedicated on the 12th of November, and on this occasion addresses were made by Bishop Starkey, of New Jersey, Bishop Quintard, of Tennessee, Governor Green, and Governor-elect Abbett. The ground and buildings cost $60,000. The hospital was founded many years ago by the late Dr. Abercrombie, rector of St. Matthew's, and the new building was greatly needed in order to carry on successfully the work thus begun.

BOSTON.

To the Editor of THE MEDICAL NEWS,

SIR: As it is the best of which there is the least heard, so let us hope it is with medicine in Boston. At all events, medicine seems to be very quiet at present and nothing of special interest has come up at the meetings.

The Medical School continues as of old, but this year is deprived of the services of Professor Bowditch, who is spending his vacation in Europe. Every seventh year the professors are given a year's leave in order that they may travel and gather facts to dispense again to the less fortunate obliged to stay at home. Dr. J. W. Warren presides over the department of physiology, while Dr. Whitney fills Dr. Bowditch's place as Dean; both are guarantees that the school will not suffer.

The laboratories contain rather more than the usual number of physicians engaged in investigating special points, from whom, doubtless, we shall hear in due time. Dr. Ernst is still continuing his study of the milk of tuberculous cows of which a preliminary notice appeared in *The American Journal of the Medical Sciences*. Besides the work being done in the laboratories of the Harvard Medical School, the writer is cognizant of a considerable amount which is being conducted privately by men whose names assure valuable results.

The amount of outside work being done is a clear sign of the useful field that awaits Scar's new laboratory for pathology and bacteriology if it ever be built and conducted on liberal principles. As yet, no start has been made on this building, which is to contain ample animal rooms, which is a great want, even teachers in the school being now forced to keep their guinea-pigs and rabbits for experimental purposes at home. The bacteriological department will offer certain peculiarities, as besides general rooms for autopsies, cultures, and the like, each worker will be provided with a small room or cell, where he can work in peace.

The two larger hospitals continue to offer a large amount of material, both surgical and medical. Perhaps the tendency of the staff of the Massachusetts General Hospital to the adoption of Brand's method in the treatment of typhoid fever may be of interest to the profession. The expense appears to be the chief stumbling-block. The City Hospital staff, on the other hand, use the antipyretics more freely, incline to the wet sheet, and are not as favorable to Brand's method.

NEWS ITEMS.

THE following letter received from Dr. Abraham Jacobi, of New York, in regard to Dr. Goodell's article in THE MEDICAL NEWS of December 7th, is of interest:

DEAR SIR: I offer twenty-five dollars as a contribution to an edition of ten thousand reprints of your article in the last number of THE MEDICAL NEWS. It is the best and probably most useful paper published in a medical journal these many years. If anything can do so, it will prevent untold cases of malpractice and numberless cases of ailing and demoralization.

Very sincerely yours, A. JACOBI.

110 WEST THIRTY-FOURTH STREET, N. Y.

Insane Asylum Burned.—The Insane Asylum of Idaho was destroyed by fire on November 25th, with the loss of eight lives.

Sir Morell Mackenzie.—It is stated that although Sir Morell Mackenzie was condemned by the Council of the Royal College of Surgeons for his publications on the case of the Emperor Frederick, at a general meeting of the body he had but one accuser.

Dr. Billings and the University of Pennsylvania.—Dr. John S. Billings has accepted the position of Medical Director of the Hospital of the University of Pennsylvania. The duties of this position have been arranged so that they will not in any way conflict with his important duties at Washington. It is understood that the Board of Trustees of the University have also in contemplation the erection of an important building for a complete School of Hygiene. It is expected that, at some future time, Dr. Billings will assume the position of Director of this department.

The Manhattan Eye and Ear Hospital.—The Manhattan Eye and Ear Hospital, of New York, has just completed its twentieth year of active work. It was opened for the reception of patients in a house hastily altered from an ordinary dwelling to the purposes of a hospital on October 15, 1869. Since then over 108,000 patients have received treatment. As a fitting memorial to the late Dr. Cornelius R. Agnew, who was the chief agent in founding the Hospital, an endowment fund is being established, and has already reached the sum of over $8000.

Dr. Northrup's Article in Scribner's Magazine.—Dr. William Perry Northrup, who wrote the articles on "Spasmodic Laryngitis," "Pseudo-membranous Laryngitis," and "Intubation," in Keating's *Cyclopædia of the Diseases of Children*, has written a very interesting article entitled "The Pardon of Ste. Anne d'Auray and other Breton Pictures," for the December issue of *Scribner's Magazine*, in which the habits of the people are portrayed in a way which carries the reader from the beginning of the article to the end without a desire to stop.

Obituary.—Dr. Rudolph Tausky, who died at the Bloomingdale Asylum, November 22d, was a man of fine natural ability and an indefatigable worker. It is supposed that excessive application to his profession unhinged his intellect, so that about four years ago in a sudden access of insanity he attempted to take his own and his wife's life. Both recovered from the pistol-shot wounds in the head, but Dr. Tausky's mind was gone, and for four years he has been in the asylum, suffering from paresis. He was a native of Bohemia and but fifty-three years old. He had had numerous hospital and dispensary positions.

An American Hospital in Persia.—The United States Minister to the court of the Shah of Persia laid, at Teheran, the corner-stone of a hospital, which has largely been promoted by American influence. An American physician of Teheran, Dr. W. W. Torrence, was the originator of the undertaking, and a portion of the funds was subscribed in this country; a larger portion was raised in Persia.

Association of American Anatomists.—The second meeting of the Association of American Anatomists will take place in the Biological Department of the University of Pennsylvania, December 26th, 27th, and 28th. The profession is cordially invited to attend the meetings.

Association of Life Insurance Directors.—Twenty medical directors of life insurance companies met in New York on December 6th, and formed a permanent organization by adopting a constitution and electing the following officers: President, J. M. Keating, of the Penn Mutual; vice-presidents, G. W. Russell, of the Aetna, and Lewis McKnight, of the Northwestern; secretary, Frank Wells, of the John Hancock; treasurer, J. W. Brannan, of the Washington. The object of the association is the promotion of medical science as applied to life insurance.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, DECEMBER 21, 1889. NO. 25.

ORIGINAL LECTURES.

PARALYSIS OF THE TRIFACIAL NERVE, INVOLVING THE INFERIOR AND SUPERIOR MAXILLARY BRANCHES—SPINAL IRRITATION.

A Clinical Lecture
Delivered at the Rush Medical College, Chicago, Ill.

BY DANIEL R. BROWER, M.D.,

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM, DIDACTIC AND CLINICAL IN THE WOMAN'S MEDICAL COLLEGE; PROFESSOR OF MENTAL DISEASES AND LECTURER ON THE PRACTICE OF MEDICINE, RUSH MEDICAL COLLEGE.

GENTLEMEN: We have before us to-day a patient who complains of loss of sensation in the right half of the face, with the exception of a small part around the angle of the jaw. We touch him in various parts of the face with the æsthesiometer and find no evidence of tactile or of pain sense. On moving the jaw as in mastication, you will notice that on the right side of the face the muscles concerned in mastication do not move to the extent that they do on the left side. This, then, is a case of paralysis of the inferior and superior maxillary and ophthalmic branches of the trifacial nerve, involving the sensory and the motor functions.

On smelling this bottle of vinegar you see he does not recognize the substance. There is, therefore, an impairment of the sense of smell. This results not from the trifacial nerve being a nerve of smell, but from the fact that it is the nerve which presides over the nutrition of the nasal mucous membrane, and by examining this membrane you will find that it is very dry. Its nutrition is impaired because of the paralysis of the trifacial nerve.

In order to test his sense of taste, we have here *bitters*, *sweets*, and *sours*. The bitters are tasted by the posterior part of the tongue; sweets by the anterior, and sours by the sides. Applying these three kinds of material to the sides of the tongue, we find that on the right there is no recognition of any of them.

The sense of taste can also be tested by electricity. We have here an electrode, the points of which can be brought close together. I will fix them at a distance of about one-fourth of an inch, and will put into the circuit two cells of the galvanic battery and apply the electrode to various parts of the tongue. You see that on the right side there is no appreciation of the galvanic current, but that on the left there is.

There is no conjunctivitis, no disease of the skin, nor any impairment of its nutrition. This, then, is a case of paralysis of the trifacial nerve, with the unusual features of involvement of both the sensory and motor functions of the nerve in all three of the branches. Paralysis of the trifacial involving a single branch is not very uncommon. The trifacial nerve is frequently the seat of neuralgia, the opposite condition to that which we find here. Neuralgia of the inferior maxillary nerve is toothache. Neuralgia of the superior maxillary branch gives us toothache of the upper jaw. Neuralgia of the ophthalmic branch of the nerve in its supra-orbital distribution is brow ague, a form of neuralgia that is very common.

Having made the diagnosis of the disease it is necessary to determine its seat, and for this purpose we must look for associated phenomena. As all the functions of the fifth nerve are involved in this case, the seat of the disease must be either at the Gasserian ganglion, at the base of the brain, or at the centres within the medulla. Now, if the disease were in the medulla, we should have associated with the paralysis disease of the nerves that supply the eyeball, because these cranial nerves in their origin and the first part of their course are in close and intimate relation with the fifth nerve. But in this case we observe that all the movements of the eyeball are well performed, so that the lesion cannot be in the pons, and there is no involvement of any other part of the body; that is, no paralysis of the arm or the leg which would reasonably be the case if the lesion was located in the pons. The lesion cannot be exterior to the ganglion of Gasser, because the three divisions of the nerve are involved, so that the probability is that the disease is located at the Gasserian ganglion.

The next point to determine is the cause of the condition. The probability is that it is syphilitic, and that it is either a disease of the bone or of the membrane. The man tells us that the affection was gradual in its development. It is probable, therefore, that it is a tumor which, by gradual growth, has encroached upon the nerve, making pressure, first upon the inferior division, then upon the middle, and finally upon the ophthalmic branch. An inflammatory disturbance might produce the same results, but it would be more apt to involve the entire structure of the ganglion at once. It would not be so gradual in its development as he tells us this was.

The treatment in this case must be by large doses of the iodide of potassium. The system will tolerate large doses of the iodide of potassium if it is administered in an alkaline solution. We will begin with 10 or 15 grains, increasing, if possible, to 40, 50, or even 60 grains, pushing it to the utmost extent that the patient's digestive system will tolerate.

Then the paralyzed side should be treated by galvanism, stimulating by means of this current the several branches of the nerve, the negative pole being placed at the back of the neck and the positive over the three several branches. The skin of the paralyzed side should be stimulated by the application of the faradic brush or a dry sponge electrode. It will be well also to guard this alterative treatment by the use of tonics—iron, quinine, and strychnine—in addition to the iodide of potassium.

SPINAL IRRITATION.

This female patient is twenty-eight years of age, married, has had one child, now three years old, who

during lactation was seriously sick and caused her mother much anxiety. She complains now of headache; pains of an uncertain character throughout the body; depression of spirits; palpitation of the heart; feels weak and tired; and you notice that she has a peculiar respiration, frequently giving a deep sigh. She says she has considerable distress after eating, and that her bowels are constipated.

We find, upon examining over her spine, that there are certain points of tenderness; pressure in the cervical region produces a considerable amount of pain throughout the entire cervical region and in the lumbar region. Listening over her neck with the stethoscope we hear the anæmic murmur, a peculiar roaring sound, which is an evidence of anæmia, poverty of the blood, and especially of a deficiency of iron. You notice, notwithstanding this anæmic murmur is so pronounced, that she looks fairly well nourished. In amount of adipose tissue, she is far above the average; so that we may have in a person who is fatter than usual marked anæmia.

Now, this is a case of spinal irritation, especially of the cervical portion of the cord, and the headache, the sighing respiration, the palpitation of the heart, the indigestion, the depression of spirits, have their origin in this depressed condition of the cervical cord, which contains the mechanism by which the blood-supply of the brain is in part regulated, and if this regulating apparatus is out of order, the functions of the brain must be disturbed. There is also a close connection with the pneumogastric nerve, the nerve that regulates to a certain extent the action of the heart, and which is the great nerve of respiration. Upon examining her pulse we find it 115 per minute.

The tenderness in the upper lumbar portion of the spinal cord gives rise also to the symptoms of which she complains—derangement of the menstrual function, irregularity and pain, a certain amount of leucorrhœa, and a variable condition of the urinary function.

The causes that produced this spinal irritation were lactation, anxiety of mind, and the attention that the sick child required.

We will order for this patient Blaud's mass, a combination of the sulphate of iron and the carbonate of potash, giving it in gradually increasing doses beginning with 2½ grains of each, and increasing the dose to at least three times this amount. We will also administer this mild laxative pill: aloin, $\frac{1}{8}$th of a grain; strychnia, $\frac{1}{60}$th of a grain; extract of belladonna, $\frac{1}{8}$th of a grain, every night at bedtime. And we will also direct general galvanization, passing a current of one to three milliampères through the head, the positive pole in front; a current of about the same intensity through the neck, the negative pole in front; and a current of four or five milliampères through the spine, the negative pole being over the epigastrium, and will direct her to take the most nutritious food that she is capable of digesting.

Mechanical Treatment of Pleurisy.—DR. RICHARD OTTO asserts that pleurisy in an early stage can often be aborted, and that the symptoms of pain can always be diminished by a bandage passed tightly around the chest at the level of the painful area.—*Centralblatt für Therapie*, November, 1889.

CARTWRIGHT LECTURES.

Delivered before the Association of the Alumni of the College of Physicians and Surgeons, New York, November 21, 1889.

BY JOHN S. BILLINGS, M D.,
U. S. ARMY.

LECTURE II.

ON VITAL AND MEDICAL STATISTICS.

THE term "expectation of life" is used by different writers in different senses, and hence has often given rise to confusion and misunderstanding. It should be used only in the sense of the mean after-lifetime—that is, the average number of years which persons at any given age, in a given place, may expect to live. In a stationary population, where there is no migration, and where the births are exactly equal in number to the deaths, the expectation of life at any age would be found by dividing the sum of the number of years which the whole population lived after that age by the number actually living at that age.

The term "expectation of lite" is often confused with the "probable duration of life," which is the age at which a certain number of newborn children will be reduced one-half, so that for any one of these children it is an equal chance as to whether it will die before or after that age. The difference between the probable duration of life and the expectation of life may be understood from the following example: Suppose that of 100 children born, 30 live one year, 20 live five years, 30 live forty years, and 20 live sixty years. Then the probable duration of life is five years, because at the end of five years just one-half of these children will be dead; so that at the beginning it is an even chance for any one child as to whether it will die before or after the age of five years. But the expectation of life of any one of these children is 25.3 years, because these 100 children will, in all, live 25,300 years of life. In like manner, if 10 of these children were to die at the end of every five years, the probable duration of life would be 25 years, and the expectation of life would be 27.5.

Another phrase sometimes used in vital statistics is "specific intensity of life." This is the quotient of the dividend of the number of persons living at any age by the number dying at that age—that is, $\frac{Px}{Dx}$, being the reverse of the ordinary mortality ratio.

The chief source of error in an approximate life table constructed directly from the census figures and a registration of deaths, without correction or adjustment, is due to the fact that there is a very considerable error in the number given of the living population in the first six or seven years of life. Usually the census figures show that the number of children two years old is greater than the number one year old, and that the number four years old is greater than the number two years old, owing to a tendency to report erroneously a child at these ages as being older than it is. If we undertake to adjust or correct these figures so as truly to represent the number living at each year, we usually have to make some assumptions as to the law governing the mortality, or as to what is sometimes called the "law of life." This expression—the law of life—refers to the

hypothesis that variations in mortality at successive ages take place in regular succession which may be geometrically represented by a curve, and that, therefore, if we know the mortality at certain ages in a given community, we can, if we know this curve, and if the number of observations were sufficient, deduce the mortality at other ages. Numerous formulas have been proposed for this purpose, from that of De Moivre in 1727, which is $Y = 86 - x$, x being the age and Y the corresponding number of the living, to the latest and most generally accepted formula of Gompertz, as modified by Mr. Makeham. This last is based on the assumption that a person's power of resisting death decreases as his years increase, so that at the end of infinitely small periods of time he loses infinitely small portions of his remaining power to resist destruction, death being considered as the consequence of two generally existing causes—the one a progressive, necessary deterioration, the other chance. If, for instance, there were a number of diseases to which young and old were equally liable and which were equally destructive at any age, the number of deaths among the young and the old by such diseases would evidently be in the proportion of the number of the young to that of the old. If there were no other causes of death but these diseases, the number of living and dying would decrease in a geometrical progression as the age increases. But if the liability to death is constantly increasing in a given ratio as the man grows older, then the number of the living will decrease in a greater ratio than a geometrical progression would indicate.

This line of human life—which in some respects is not unlike the line in the palm of the human hand, which the ancient teachers of cheiroscopy also called the line of life—is that of the healthy and normal individual. Many persons do not at any time possess the amount of vital force which it represents; many infants at birth have but the capacity for a few hours or a few days of existence. Some men begin to grow old at forty; the atheromatous degeneration invades their arteries, the heart becomes fatty, and at fifty they are in extreme old age as regards the processes of retrograde metamorphosis and the ability to resist death. Calculations and corrections based on such formulæ as these give interesting results and are useful to life-insurance work, but they are unnecessary to the purposes of the sanitary statistician. Even the fundamental hypothesis upon which Gompertz's law is based—that the proportion of deaths at a given age is constant—is always untrue for any given age, as the prevalence of infectious and contagious diseases of various kinds, and of various lethality, varies with different years; and for this reason it is desirable to have the records of deaths for a considerable period of time—at least three years, and, better, ten to twenty years—in order to correct these variations.

It is impossible to calculate a life table for the United States as a whole, for we have no accurate information as to the total number of deaths occurring in any given period of time in the United States, and still less as to the number of deaths occurring at each group of ages. But even if such a table could be prepared, it would be of very little interest or use, for the conditions of the various sections of the country as to climate, occupations, prevailing diseases, character of inhabitants, etc., are so widely diverse that the average or mean would scarcely be applicable anywhere. The most useful life tables for sanitary purposes are those which relate to certain circumscribed localities, such as a single city, or even a single ward of a city; but for scientific and medical purposes the most useful are those which relate to particular classes of people, particular occupations, etc. There is a special difficulty in preparing an accurate life table for a city, due to the effect of migration into and out of the city from and to the surrounding country, which disturbs very much the rates of death at different ages. The mortality in a great city is almost always reported as less than that which the actually existing causes of death and disease tend to produce, because domestic servants, shop-girls, and others who have come from the country, go back to their rural homes when their health begins to fail after a year or two of city life, and there die. This is especially the case in regard to deaths from consumption and diseases of that class. The groups of ages which are thus specially affected are those between fifteen and twenty-five years; and, therefore, the mortality at this group of ages in the large cities, as calculated from the number of deaths, is too small to represent properly the causes of death acting on the population at those ages. On the other hand, the mortality at the same ages in the rural districts near the city will be correspondingly unduly increased.

The data necessary for the construction of life tables are comparatively rarely available for the purposes of the sanitarian. Hence, while admitting that these furnish the only true measure of public health, registrars of vital statistics and sanitarians have sought for other standards for such measurement, the data for which could be more readily obtained and more easily applied. Especially has the search been made for some means of measuring sanitary conditions and progress from the data furnished by deaths alone, without reference to population. One of the most common of these is the use of the period of infancy from 0 to 5 years, by comparing the number of deaths at this period with the total number of deaths. It is very certain that the period of infancy gives the most sensitive test of sanitary conditions; but the comparison must be made, not with the total number of deaths at all ages, but with the number of the living population furnishing such deaths.

Another method, which we can only use for a census year, is the use of the ratio which exists between the total number of births during the year and the number dying during the year out of this number of births. This is not the same as taking the total number of those dying under one year of age. For example, in the city of Brooklyn during the last census year there were 8805 births, and of these 1408 died, leaving on the date of the census 7397 living children under one year of age, putting aside the effects of migration; but the total number of deaths of white male children under one year of age in Brooklyn was 2059; hence, 159.9 per 1000 of those born within the year died within the year, while the deaths of children under one year were 278.4 per 1000 living at the end of the year, with a still higher rate for the year.

The test of sanitary condition which is most generally

employed in this country is the proportion of the number of deaths which occur in children under five years of age to the whole number of deaths reported. This does fairly well in comparing the rates of the same city, in which it may be presumed that the general ratio of age distribution is nearly uniform at different times, but it is a very fallacious method of comparing rates of different cities or localities.

Much the same may be said of comparison of deaths at a given age-group to total number of deaths, which is apt to give very misleading conclusions. For example, suppose in a given city the total number of deaths of children under five years of age was 30 per cent. of the total deaths, while in a given class of people in the same city they were only 10 per cent. of the total deaths. It would be by no means safe to infer that this special class was in a better sanitary condition, because among the poorer classes the proportion of children is always relatively large, which implies a large population exposed to these special diseases, and, consequently, a larger number of deaths under five years of age, without reference to the sanitary condition.

Another test which has been proposed is that of the mean age at death, which is the quotient of the sum of the ages of different individuals at death, divided by the total number of deaths. This is only useful in comparing the conditions of two populations when the age and sex constitutions of these populations are the same. It is out of the question to apply the test to different occupations, as, for example, to compare the mean age at death of major-generals with that of second lieutenants. The chief use of this test is in its application to different causes of death, but even for this purpose the death-rate in relation to population is much better.

A considerable part of the errors to which one is liable in comparing the mean age of different occupations at death may be avoided by excluding from the computation all deaths of children under five years of age.

Although the expectation of life, or mean after-lifetime, is the standard of comparison almost universally accepted by statisticians, it is, in some respects, not a very satisfactory one, since it is often misunderstood by the public, which is apt to use the word "mean" in the sense of usual or ordinary—that which occurs most frequently. But the ordinary lifetime, or, as Bertillon calls it, the *vie normal*, is a very different matter. After the perils of childhood are passed the greatest number of deaths cluster about the age-period of seventy years, and the popular phrase here would be that it was a premature death which occurred in a man under sixty years of age.

The great majority of the mortality statistics prior to the present century are necessarily incorrect and unreliable, because they are based, for the most part, on the data of deaths alone. The deaths can only be taken as a measure of probable duration of life for any community when the births and deaths are equal and there is no migration, a state of matters which must very rarely happen and be of very brief existence.

Among the many expedients which used to be employed for estimating population was that of multiplying the number of living in which one death was supposed to occur, by the number of deaths. That is to say, by guessing at a factor which could only be ascertained by comparing the annual deaths with the number living. Take, for example, the estimates of the population in London made by Graunt in 1662, on the basis of one death occurring out of every 32 living, which made the population to be 403,000. In 1683, Petty, taking the mortality to be 1 to 30 persons living, made the population to be 669,930.

One peculiar thing about this method is, that it is liable to make the population seem the largest at those periods when it was in reality the smallest; for when the number of deaths was unusually large by reason of an epidemic, which would actually lessen the number living, it would show an apparent increase in the population for the same period.

It may, perhaps, be asked why it is, if the nature of the data which are required to make mortality statistics reliable and satisfactory is so well known, that more of them are not provided by the municipal and State officers charged with the registration of vital statistics. For example, New York City has a very perfect system of registration of deaths, which is in competent hands and is well executed. Why, then, has New York City published no separate mortality report since 1883, and why, in the reports which it has published, does it not give the data with minuteness of grouping, so that we might know the number of deaths at each age, of each sex, and of each race and occupation in each ward from each cause of death, instead of giving, as it gave in its last report, the number of deaths from each of a few causes of death for each of a few groups of ages, and separately for each sex, and for natives of the United States, natives of foreign countries, and colored, to which is added a statement of the deaths from zymotic diseases in each ward?

In order to understand the answer to this it is necessary to have a clear conception of the difference in cost of tabulation and publication according to the mode of grouping of the data. If, for example, the deaths are given by 20 groups of ages and by sex and by color for each of the 24 wards, and for the city as a whole, it will require 49 columns to do this. If we make the distinction for, say, 100 different causes of death, allowing 50 lines to the page horizontally, and 20 columns vertically, giving 1000 places per page, we should get all this information for the city on 4 pages; but if we wish to show the number of cases of death from each cause at each group of ages, of each sex and each color in each ward, we shall have to have 2000 columns, which will make about 200 pages. If it be desired to estimate the influence of seasons in connection with all these things, we must have a similar table for each month, or 2400 pages large octavo.

Again, let us suppose that we wish to have the data fully presented in order to estimate the influence of occupation upon health. We will only ask for details of 100 occupations in males. But we should like to know the number of deaths in each of these occupations for each of, say, 10 groups of ages, in each of at least 5 races, in the married and single, in each of 12 months, for each of the 24 wards, for each of, say, 100 different causes of death, giving 288,000,000 possible places, making 288,000 pages large octavo.

It is, of course, out of the question to present the data

in any such detail as this, and it is therefore necessary to make a selection of combinations which will indicate the most interesting relations of the several points under discussion.

It is, however, often very difficult and even impossible to tell precisely what combinations it will be necessary to make to get at the probable explanation of an especially high or low death-rate in a given group; and hence we sometimes have to make a very considerable number of tentative combinations and tabulations, from which we may select only a few as really throwing light on the matter, and therefore as worth publication.

When we have to tabulate data in such a way that the individual items are to be distributed through a thousand columns or more, and each of these to be summed up for different localities, a vast amount of clerical labor is required. For distributing in 1000 spaces the various items assigned in each death certificate, if it be done by the old-fashioned system of tallying on a large sheet, an expert clerk will not be able to tally off more than 1000 records of death per day; so that for, say, 30,000 deaths, which is less than the average number of annual deaths in New York City for the last ten years, it would require the labor of a clerk thirty days to produce a single-page table—about one per cent. of what is needed.

By the use of cards or slips, tallying machines, adding machines and sorting boxes of various kinds, this labor may be much reduced. One of the latest methods of doing this is by the use of cards of a uniform size in which holes punched in certain parts of the card correspond to the various divisions of locality, time of death, sex, age, occupation, cause of death, marital condition, etc. These cards may then be passed through a machine which registers on a series of dials such combinations of the data as the dials may be adjusted for, by means of electrical connections established between a metal plate below and a series of metal rods above, wherever there is a hole in the card.

Death-rates, even when derived from complete and accurate data and compiled in the most satisfactory manner in the form of life tables, necessarily give only an imperfect view of the prevalence of disease in a community, or of the relative amount of disability among the people, requiring extra labor by the productive class, due to the recurrence of sickness. Many forms of disease which render life more or less of a burden, and some of which totally disable the individual from earning his subsistence, seldom or never appear in the registers as a cause of death; while even of those diseases which are reported as causes of a considerable proportion of deaths, we can rarely at present indicate any definite or certain relation between the number of cases of the disease and the number of deaths reported. For example, it is well known to all practising physicians that the mortality varies greatly in different epidemics of such diseases as scarlet fever, measles, smallpox, whooping-cough, yellow fever, etc., the variations appearing to depend principally upon the particular conditions of the environment as to temperature, moisture, winds, density of the population, etc., at the time of the outbreak, and also upon particular conditions of the specific virus or microörganisms causing diseases of this kind.

Take, for example, the spread of yellow fever in Texas and along the Gulf Coast during the year 1867. Here the specific cause of this disease appears to have entered the United States by two distinct routes, one coming from Vera Cruz, Mexico, and the other coming from the usual source, Havana. At that time the United States had a comparatively large number of troops along the southern border of the country, and hence we have a series of returns showing not merely the number of deaths but also the number of cases of sickness from this disease occurring in a given population.

Now, in those places where the disease was of Mexican origin the cases were more fatal than those of Cuban origin, "two out of every five cases of the former dying, while the mortality of the latter was only two out of seven. The ratio of deaths was 400 per 1000 cases for the first of these groups, 284 per 1000 for the second."[1]

For the great majority of diseases it is not possible to obtain statistics as to their prevalence among a general population. The only sources to which we can look for information of this kind are the records of the Army and Navy, of the police force in certain cities, of the employés of railroads, and of the members of certain societies having insurance against sickness. The records of the Army and Navy are especially valuable in this point of view, but they relate only to males of certain groups of ages and of a carefully selected class of population.

In the last United States Census an attempt was made to obtain on the schedules of the living population the number of those who on the first day of June, 1880, were so sick or disabled as to be unable to pursue their ordinary occupations. This was the first attempt of the kind which has been made in this country, but similar attempts were made in two censuses in Ireland, in a census of the Australian Colonies, and in a census of Hungary.

The first examination of the United States schedules seemed to show that the returns of the sick were too imperfect and too inaccurate to permit of drawing any conclusions from them. But subsequently it turned out that they were really more complete than had been supposed, and a sufficient number were compiled for different parts of the country to obtain a fair sample of the general results. This compilation showed that for the total population over fifteen years of age the number found sick out of every 1000 living varied from 7.17 to 22.7 for males, and from 8.1 to 17.5 for females, or about 1⅓ per cent. of males and 1½ per cent. of females. These do not include the blind, deaf and dumb, insane, and idiots, and it is probable that the figures do represent very fairly the different proportions of sickness occurring in males and females and in certain groups of ages at the time the Census was taken, which, it must be remembered, was at a period when there is probably the least amount of sickness and disability among adults.

From the results of data derived from mutual benefit societies in England, it has been estimated that for every case of death in a community there are two persons constantly sick; that is to say, there is an average of two years' sickness to each death, or that, if the annual death-rate is 18 per 1000, the average number constantly sick is about 36 per 1000.

Mr. T. R. Edwards (London *Lancet*, 1835–36, i. p. 855), from the study of a series of returns from friendly

[1] War Department, Surgeon-General's Office, Washington, 1886; Circular No. 1, p. xviii.

assurance societies, claimed that, for large numbers of people, there is a constant ratio of sickness peculiar to each age, and that the duration of each case of sickness at any age is in proportion to the mortality at that age. His theory is that the mortality at any year of age exceeds that of the preceding year by 2.999 per cent., or that the mortality during any decennial interval of age exceeds that of the preceding decennial by one-third part; or that the mortality rate doubles in twenty-three and a half years.

According to his theory, if a physician loses by death double the proportion of patients at the age of forty-three that he does at the age of twenty, the effect of his remedies in each case is the same.

By the Census reports the proportion of sick to 1000 of population of different ages was as follows:

Age.	Males.	Females.
15 to 25	6.9	6.8
25 to 35	8.6	9.7
35 to 45	12.2	11.5
45 to 55	16.8	14.4
55 to 65	25.5	20.4
65 and over	44.5	35.3

This corresponds in a general way to the conclusions of Mr. A. G. Finlayson relative to the amount of sickness in members of friendly societies, printed in 1854.[1]

He found that taking the whole mass of male members of friendly societies from the age of fifteen to that of eighty-five, about five years of sickness occur to each man during this seventy years; but during the period of labor from the commencement of the sixteenth year of age to the close of the sixty-sixth, there are in this fifty-one years but seventy-eight weeks of sickness, or about one and a half weeks per annum; and the sickness occurring from forty-two to sixty-six is almost double that occurring in the first half from fifteen to forty-one. Hence he concludes that the sickness of the first twenty-five years of working life is almost exactly one-half that that of the second twenty-five years. In the class devoted to heavy labor the sickness is almost a year more, or in the proportion of eleven to nine as compared with the sickness undergone in the class engaged in light labor.

It is also to be observed that during the early years of life—say from twenty-one to forty-one—the number of persons withdrawing, or excluded from such societies, is very large, being nearly five times the number of deaths. As the age of the members increases the departures become fewer, because it becomes more of an object to remain connected with the society, since the rate of annual payments is the same for all ages, while the proportion of sickness steadily increases, as we have seen, with advancing age.

Several attempts have been made to induce physicians to keep a record of all the cases they treat, but with very little result, and it is very improbable that anything like complete returns of sickness will ever be obtained for any large body of the civil population. Such registration will always be confined to infectious and spreading diseases; in other words, those which are known or supposed to be preventable. In order to make a registration of this kind of any great practical value it must be continuous and compulsory. The plan of endeavoring to get the medical men of a locality to contribute voluntarily this information, even when accompanied by the offer of the payment of a fee, has produced partial and incomplete results, which become more and more incomplete as time goes on and the first enthusiasm in favor of the new plan dies away.

The various systems of compulsory notification which have been tried are, first, to require the medical attendant only to furnish the returns to the Health Office; second, to require the householder or head of the family to make such returns; third, to require both the doctor and the householder to make such returns; and fourth, to require the doctor to certify to the householder and the latter to notify the health authorities.

On the part of some members of the medical profession, both in Great Britain and in this country, strong objections are urged against compulsory notification of disease, and, especially, against that form which requires the doctor to furnish such notification direct to the sanitary authorities. It is urged that such notification is a violation of professional secrecy; that it leads to concealment of disease and to the refraining from calling in a medical attendant, and that it tends to throw the treatment of such cases into the hands of a lower class of practitioners, who are willing to run the risks of violation of the law, or even to make false returns for the sake of securing an increased practice. There is, however, little difficulty in keeping the information furnished strictly confidential, provided the health officer is a man of tact and discretion, and provided, also, that the press does not insist upon being too inquisitive with regard to matters of this kind.

Any system of compulsary notification, however, which has to be continuously successful, involves two things: First, that the health officer shall not be in any way engaged in, or connected with private practice; so as to do away with all reluctance on the part of general practitioners reporting their private cases.

The second is, that to obtain any benefit from notification, special hospital accommodations for such forms of diseases as are reported must be provided by the community, and there must be a power of compulsory removal of patients to such hospitals in certain cases.

Undoubtedly, valuable statistical data might be obtained by the simple notification alone; but the desire to obtain statistical information will never be accepted as a sufficient ground for legislation requiring compulsory notification.

We hear very much in recent years of the proportion of deaths from zymotic diseases as a test of the salubrity or sanitary condition of a place; but as there is no general agreement as to what is and what is not a zymotic disease, and as the term rests on a theory of causation of disease which is now definitely abandoned, it should no longer be made use of. It is much better to select the mortality from certain forms of disease, and specify these, in order that we may know exactly what we are talking about and be sure that the matters compared between the two localities are the same. English health officers often use the term "seven principal zymotic diseases," by which they mean smallpox, measles, scarlet fever, diphtheria, whooping-cough, typhus fever, and enteric fever. If this is the selection it is not a good one, for it

[1] See Insurance Cyclopædia, vol. v. p. 83.

omits the diarrhœal diseases. Forty years ago, near the commencement of the speculations of Dr. Farr and Mr. Simon as to the causation of disease, nearly all of the contagious diseases were grouped together as zymotic diseases and were supposed to be more or less connected with filth. At present we know that the cleanliness of the surroundings has little or nothing to do with the prevalence of smallpox, measles, scarlet fever, or whooping-cough; so that these, which are typical zymotic diseases, are of very little interest in connection with the question as to local causes of diseases in a place, connected with uncleanliness, and to be remedied by sanitary effort.

Their relative prevalence, and the mortality due to them, are of interest in a totally different connection, and their separation involves an entirely different field of sanitary work. Such diseases as phthisis, diphtheria, and the various forms of diarrhœal disease, including cholera infantum, or the summer diarrhœa of children, of England, are of especial interest as regards the field of local sanitary work in relation to sewerage, drainage, and cleanliness.

The influence of habitation upon death-rates and on the prevalence of certain forms of disease is indicated by statistics given by Dr. Korosi[1] for the city of Buda-Pest, where the deaths are reported with the following classification, viz.:

1. Persons in a habitation where, at most, two persons dwell in one room.

2. Persons dwelling where from two to five persons dwell in one room.

3. Where there are from five to ten in a room.

4. Where there are more than ten in a room.

The first class includes the rich and well-to-do. The others present increasing grades of overcrowding. Of each 10,000 deaths reported, 1,941 belong to the first; 5,759 to the second; 2,167 to the third, and 133 to the fourth; and these ratios may be used to compare with the proportions of deaths from any disease, or group of diseases, as occurring in the different classes.

Comparisons thus made indicate that contagious diseases, with the exception of scarlatina and typhus, are more frequent and more fatal in the crowded houses, and that the same is true of congenital debility and diarrhœa, while tuberculosis and pneumonia do not seem to be specifically influenced by this cause. (?!) As the figures of death in these categories are not comparable with those of the living population, the results have not much value.

Suppose, now, that we are studying the death-rates of a city for a series of years, in order to determine whether its sanitary condition is, upon the whole, improving; whether work which has been done in the way of introducing sewerage, or improved water supply, or special precautions in dealing with contagious diseases, have had an evident good effect, and have produced results which are on the whole satisfactory in proportion to their cost. It is very evident that we must have something more than the mere gross death-rates for the whole population in order to form an intelligent opinion on these points. A gross death-rate may, it is true, give a correct answer to the question as to whether the sanitary condition is improving, but we can never be sure of the correctness of this answer until we have made detailed comparisons of the mortality by age and sex, and of that due to certain great classes of disease.

What has been the influence of modern civilization upon the average duration of human life—upon rate of increase of population—upon the average health and vitality of the races which it has affected? The present population of the world is between 1500 and 1600 millions, of which there are in Europe over 350 millions, and of European stock in other countries 100 millions—in all, say 450 millions, as against 150 millions in 1788. (See Giffen, *Jubilee Volume of Statistics*, 1885, p. 99.)

Evidently the birth- and death-rates now prevailing in Europe and the United States cannot have long continued, for if we suppose a population to double itself only once in a century, a million of people living 1200 years ago would have developed into a population of over 4000 millions by this time.

What, then, is the difference between the expectation of life in New York, at the present day, and that in European cities one, three, five, ten, or twenty centuries ago? This question has been asked in various shapes many times, and many attempts have been made to answer it; the general conclusion being that there has been a very great increase in the average longevity of man in civilized countries not only within the last thousand years, but within the last century. Notwithstanding, it must be confessed that the statistical records bearing on this point are very incomplete, vague and unsatisfactory, and that it is only for the last forty or fifty years that we can speak with anything like scientific precision as to the amount of progress made.

So far as what is termed potential longevity, that is to say, the maximum duration of life possible in an individual of the race, is concerned, there is no evidence that this has changed for at least 2000 years, being, for man, generally taken as 100 years. You will remember the Scriptural declaration that "the years of a man are three score years and ten, and though by reason of strength they be four score years, yet is their strength labor and sorrow;" notwithstanding, there are sufficient records to prove that even in those days the potential longevity of man was as great as it is at present.

But when we come to the average longevity and expectation of life at birth, there is sufficient evidence to indicate that it has increased; but whether this is due to the preservation of more infant lives for a few years although they may still die before the productive period is reached, or to an increase of the number of those who live into and share the working period of life, is still uncertain, for this question can only be settled by comparative life tables, and I have already explained that we have no reliable life tables that are much over fifty years old.

I have already referred to the average duration of life among the better class of Roman citizens, as fixed by Ulpian, being equal to thirty years. Among the oldest data which we possess, from which we can attempt to compare death-rates of past centuries with those of the present, are the records[1] of Geneva in Switzerland, which

[1] Korosi: Influence des Habitations sur les Causes des Décès, etc. Paris, 1877.

[1] Malet: Annales d'Hygiène, 1837, vol. xvii. p. 5.

date from 1551. The average annual death-rate per 1000 was as follows:

From 1551 to 1600	40
" 1601 to 1650	37
" 1651 to 1700	35
" 1701 to 1750	33
" 1751 to 1800	29

From 1801 to 1813 the mean duration of life was thirty-six years and six months.

From this, the probable duration of life is given as follows:

Periods.	Probable duration of life			Proportionate increase.
	Years	Months.	Days.	
End of the 16th century	8	7	20	100
17th century	13	3	16	153
1701 to 1750	27	9	13	321
1751 to 1800	31	3	5	361
1801 to 1813	40	8	0	470
1814 to 1833	45	0	29	521

The figures are not sufficiently full or accurate to justify the conclusion that the probable duration of life in this place has been increased five times in three centuries, but they do indicate a very marked and progressive increase.

In the sixteenth and seventeenth centuries Geneva had a small population, frequently exposed to fatal pestilence, and produced a comparatively large number of infants, of whom but a very small proportion reached the age of puberty. In the early part of the eighteenth century the average mortality of all European countries, taking towns and villages together, is estimated by Sussmilch as 1 in 30, or 27.778 per 1000.

The most important contributions to our knowledge of the increase in the duration of life in recent years is contained in a paper on "The Decline in the English Death-rate," by Noel Humphreys, published in the *Journal of the Statistical Society* in 1883: and in a report by Dr. William Ogle in a supplement to the Forty-fifth Annual Report of the Registrar-General of England, published in 1885.

The conclusions, as based upon English life tables, comparing periods from 1838 to 1854, and from 1871 to 1880, are as follows:

The mean after-lifetime of a male at birth was for the first period 35.91 years, for the second 41.35, showing an average gain of nearly a year and a half. The mean after-lifetime continues longer in the second period than in the first for each year of life until the nineteenth. At the close of the nineteenth year the expectation of life was exactly the same in each period, viz., 40.17 years. From that time onward the after-lifetime is shorter in the recent period than in the older one; that is to say, the individual male in England lives on an average a shorter time after he is nineteen years old than he did forty years ago; but the number of males, out of equal numbers at the start, who survive to live these shorter lives, is very much greater than it was formerly, so that the aggregate life of the whole is considerably increased. The gain is greater in females than in males. Thus, in the first period, the expectation of life in females was 41.85, while in the second period it was 44.62, being a gain of 2.77 years, on an average, for each female. The after-lifetime continues longer in the new period down to the completion of the forty-fifth year, when the expectation of life becomes the same, viz., 24.06.

Taking a million males and a million females the following table shows the additional years gained at each age-group, for each sex, during the recent period:

Age-periods.	Males	Females
0 to 15	255,340	288,226
15 to 25	281,872	339,933
25 to 35	344,906	453,221
35 to 45	310,746	490,471
45 to 55	211,040	474,009
55 to 65	86,920	385,257
65 to 75	10,464	239,617
75 to 85	27,770	82,568
85 and upward	13,451	8,282
Total years gained,	1,439,139	2,777,584

This table plainly shows how erroneous is the conclusion sometimes drawn that because the death-rates have fallen only in the earlier age-periods, while they have risen in the later age-periods, the aggregate gain to the community from the changes is confined to the unproductive years of life. We may fairly take the period which intervenes between twenty-five and sixty-five years of age to be the most valuable part of life, and of the aggregate years saved, 66 per cent. in the case of males and 65 per cent. in the case of females are lived in this period.

The earliest attempt to give vital statistics for the United States is probably a paper by Edward Wigglesworth, published in the *Memoirs of the American Academy of Arts and Sciences*, 1793, vol. ii. page 131, entitled, "A Table showing the probability of the duration, the decrement, and the expectation of life, in the States of Massachusetts and New Hampshire, formed from sixty-two bills of mortality on the files of the American Academy of Arts and Sciences, in the year 1789." The whole number of deaths reported on these bills was 4893. He had no data of population, but the reports indicated that the births in the locality sending the bills were twice as many as the deaths. As his calculations are based solely on the deaths alone at certain ages, the conclusions are evidently entirely unreliable.

Another paper is by J. E. Worcester, printed in the *Memoirs of the American Academy of Arts and Sciences*, Philadelphia, 1833, vol. i., new series, page 1, and entitled "Remarks on longevity and the expectation of life in the United States, relating more particularly to the State of New Hampshire." Taking the bills of mortality of thirty-two townships in New Hampshire, for an average length of time of twenty-one years, he found that the death-rate was 1 in 83, or 12.04 in 1000. He wisely remarks that the ratio is so small as to excite suspicion concerning the accuracy of the bills.

One of the most frequent fallacies in the use of statistical data is to mistake an effect or a coincidence for a cause. For example, it is common to speak of rapid growth in population of a locality or country, as if it were in itself a good and desirable thing, a cause of prosperity and well-being; and when this growth lessens or ceases we find some philosophers trying to devise ways and means to increase it. This, for example, has been the case in France for a number of years, and

various plans have been proposed for increasing the birth-rate and diminishing the death-rate, in order to produce prosperity and strength in the country. The fact is, that rapid increase of population in a country is an indication that things are going on well there; that there is a demand for labor; and that men find that they can increase their comfort by going, or staying, there. But it may, or may not, be a cause of prosperity at a given time, and sometimes it may cause hardship, weakness, and suffering.

You are all, no doubt, familiar with what is known as the Malthusian theory, which is, essentially, that population is limited by the means of subsistence available; that population increases in a geometrical proportion, while the means of subsistence do not increase in a faster ratio than arithmetical progression; that, therefore, the growth of population is checked by want of means of subsistence, and, therefore, that the increase of mankind may be considered as the chief source of misery, which misery, together with moral restraint to a limited extent, and vice, check the superior growth of population, keeping it at a level with the means of subsistence.

If this doctrine be applied to the lower animals, or to an extremely savage and ignorant set of men, it is very nearly correct; for, in this case, the term "means of subsistence" applies almost exclusively to the natural produce of the earth. As soon, however, as man applies his intelligence to the increase of the means of subsistence by improvements in agriculture, by manufactures, etc., it is no longer true that the means of subsistence increase in an arithmetical proportion. They may increase, and for the last fifty years have, throughout civilized regions of the world, actually increased in a ratio more rapid than geometrical proportion, and more rapid than the increase of population; and it is, therefore, substantially true that "the character of every race of men is the real limit to its numbers in the world, if allowance be made for accidents of position and time" (Farr, *Vital Statistics*, London, 1885, p. 15).

The uneducated and unskilled laboring classes, who are without capital, when gathered together in large masses, tend constantly to illustrate the theory of Malthus by increasing faster than they can provide means of subsistence for themselves and their families.

But this tendency is opposed by the advance in knowledge, increase in energy, and improvement in inventions in the educated classes, who, although it may be said that they are acting only from selfish interests, are, nevertheless, led by those interests to expand the fields of agriculture, manufactures, and commerce, and, thus, both to increase the means of subsistence and to lessen the price thereof.

Under favorable conditions a population is capable of doubling its number every 25 years. In the United States, between the years 1790 and 1860, the population doubled itself about once in 23½ years. But a proportion of this increase was due to immigration.[1]

[1] In estimating the progress of the population of the United States for the next century, if we assume a rate of 33.3 per cent. of increase in ten years, which is a little less than the mean rate for the last century, we find that the probable population in 1990 will be 1,206,562,248, giving a density of population of 399 to the square mile, approaching the present density of China, which is 420, or of Belgium, which is 434 per square mile.

Whether in the future a systematic attempt to maintain an equilibrium between subsistence and population will become a practical problem of national policy, is, at present, a purely theoretical speculation, for it is very easy to show, as has been done by Mr. Atkinson, that the means of subsistence at present at our command can easily be quadrupled, as the increase of the population occurs both to require and produce such increase.[1]

One of the most interesting and important questions in vital statistics in this country is that relating to the relative increase in the white and colored population in the Southern States, and the influence which has been, and will be, exerted upon this by the abolition of slavery. On the one hand, it is claimed that the large increase in the colored population between 1870 and 1880 indicates that in fifty, or at most a hundred, years more it will greatly predominate.[2] On the other, it is affirmed that the greater increase of the colored population is apparent rather than real.

We have little information of value relative to the vital statistics of the colored population in the South, previous to the abolition of slavery. The only two Southern States having registration laws which were to any extent enforced were Kentucky and South Carolina. The Kentucky reports relating to the registry and returns of births, marriages, and deaths are eight in number, commencing January 1, 1852, and extending to December 31, 1859, the last report being printed in the early part of 1861. The South Carolina annual reports of registration of births, deaths, and marriages begin with the year 1853 and end with the year 1859. In neither State was the registration of either births or deaths in any year sufficiently complete to permit of accurate comparisons with the number of living population, either for the whites or blacks.

The conclusions drawn by the registrars may be summed up in the statement that the birth-rate of the slaves was much greater than that of the whites in South Carolina, while the difference was not marked in Kentucky; that in both States the death-rate of the negro was decidedly greater than that of the whites, especially in infancy, and that the average age at death was decidedly higher in the whites.

I have already shown the fallacies connected with taking the average age at death as a means of judging either the healthfulness of a locality, or the expectation of life. Notwithstanding, this is practically the only ratio to which we can refer in regard to the question under consideration.

[1] Maria Mitchell, in a recent number of The Century, speaking of an interview with Sir John Herschel, says, that one morning at the breakfast table Herschel put the following question: Suppose that since the time of Cheops, 3000 years ago, man had only died from natural decay at about 90 years of age, and that the population doubled itself every 30 years; starting with a single pair at the time above referred to, would the present surface of the earth afford standing room to the entire progeny, if closely packed? The replies to this conundrum were various—one saying that they would occupy a layer three feet deep, another a layer fifty feet high, and so on, extending the guesses as he said "More, more," to the distance of the moon, to the sun, and, finally, to the planet Neptune; when his reply was, that they would have piled up upon the surface of the earth to a distance equal to a hundred times the distance of the earth from the planet Neptune.

[2] See paper by E. W. Gilliam, Pop. Sci. Monthly, xxii. 433.

The records of the statistics of 1880 show that the birth-rate for the year was greater in colored than in the whites, since in the ten groups in which distinction of color was made for this purpose, the birth-rate for the whites was 32 and for the colored 38.06 per 100 of aggregate population; or, for the whites, 127.1, and for the colored, 163.8 per 1000 of women between the ages of fifteen and forty-nine. The birth-rate is always higher among the poorer classes of a population, and it is doubtful whether the birth-rate of the negro is higher than that of the laboring classes among the whites. The mortality among the colored infants in the earlier months of life is much heavier than among the whites in the same localities. For example, in the ten grand groups just referred to, out of each 1000 infants born, the number which died under six years of age was, for the whites, 66.7, and for the colored, 71.4. This fact tends to increase the birth-rate among the colored, because, with the loss of the infant and the consequent cessation of nursing, the probabilities of a fresh pregnancy increase. The marked difference between the vital statistics of the white and colored in the South is much greater in the cities than in the rural districts.

The average mortality in a population of a little over 43,000,000 whites, was recorded as 14.74 per 1000; while in a population of 6,752,000 colored, the recorded mortality was 17.28 per 1000. It is known that each of these recorded death-rates is much lower than the actual one, owing to failure to record the whole number of deaths occurring during the census year; but it is also known that the proportion of failures to record was decidedly greater among the colored than among the whites, and hence the difference between the death-rates of the two races is even greater than that indicated by these figures.

How far is this excessive mortality in the colored population due to race characteristics? Is it due to peculiar susceptibility on the part of the negro to certain distinctive forms of disease, or to his having less vital force and capacity to resist disease and death? Undoubtedly the great mass of the colored population is poor and ignorant, lives in the dampest and dirtiest parts of cities, and in the midst of unhealthy surroundings, and is in other respects unusually exposed to well-recognized causes of disease.

The statistics of 1880 show that the colored race is peculiarly liable to fatal results from certain forms of disease, especially consumption, pneumonia, diarrhœal diseases, affections of pregnancy, scrofula, and venereal diseases; and that, on the other hand, it is much less liable than the white race to fatal results from cancer, diphtheria, diseases of the nervous system, scarlet fever, and suicide.

Notwithstanding the interest and importance of the question, we have, at present, no sufficient data to determine whether the negro, under the same circumstances as to poverty, etc., is or is not more prolific or short-lived than the whites, and absolutely no data of any value for determining the relative fecundity and mortality of the mixed bloods, including mulattoes, quadroons, octoroons, etc. An effort will be made in the coming census to supply this deficiency as far as possible. In the enumeration of the population, those of mixed blood will be recorded separate from the pure blacks and the pure whites, and an effort will be made to obtain corresponding records of death in order to determine the death-rates of these mixed bloods. An effort will also be made to determine the birth- and death-rates of certain classes of poor and ignorant whites, such as the tenement-house population in our northern cities, as distinguished from those of the mass of the white population, which will give us a better means of comparison of the mortality of the two races, under comparatively similar circumstances, than we now have.[1]

In studying the causes of disease and death in communities, a very important point to be considered is the relative poverty, ease, or luxury in which different parts of the population live, or the sickness and death-rates of so-called social classes.

That extreme poverty, producing inability to obtain the amount of food, clothing, and shelter requisite to preserve health, is a direct cause of high death-rates, especially in northern climates, is known to all; but the extent to which this factor of want influences the death-rates in different countries or communities is by no means easy to determine, and thus far we have, for the most part, only data bearing indirectly upon this subject. For the provident, and presumably well-to-do, classes we have the statistics of life insurance companies; but these are for selected lives, which fact tends to give a low death-rate during the early years of the policy-holders; while, on the other hand, the tendency to cease paying annual dues and to give up the insurance is greater in those who are well and strong than in those who have reason to suspect that they are diseased, so that the death-rates in the greater ages are higher in the insured than in those not insured. We can only draw some inferences from the vital statistics of occupations, from tenement-house statistics, etc.; but it is very difficult to distinguish between effects of density of population, occupation, race, intemperance, uncleanly habits, and actual want of the necessaries of life.

One of the latest systematic attempts to enumerate the population of a city by social classes, and to obtain corresponding reports of deaths so as to give death-rates, is that made in Dublin by Dr. Grimshaw.

In this connection may be mentioned the statistics collected by insurance companies among the Quakers, or Society of Friends, both in England and in this country.

In 1830 Mr. Robert Ranking published a table showing the probability of life among the Society of Friends in the city of Bristol, England.

The superior expectation of life shown in this city led to the establishment of a Friends' Provident Insurance

[1] Dr. Berenger-Feraud, in a note on the fecundity of the mulattoes of Senegal, published in Revue d'Anthropologie, 2d series, vol. ii., 1879, p. 577, gives the details with regard to the offspring of 118 females of mixed blood, and concludes, 1st, that the union of a white man with a negress in Senegal produces children apparently of good health; 2d, the offspring of these mulattoes between themselves, when there is no further intrusion of pure black or white blood in the descent, give children who are usually sterile; 3d, when there is a new addition of white blood after the first generation, the offspring are less vigorous, the number of the girls becomes greater than that of the boys, and the girls are often sterile, with a strong tendency to abortion.

The data are insufficient to bear out any definite conclusions, and the above can properly be put in the form of questions only.

Institution in the following year, due to the belief that the members of this society had a superior longevity; but the parties concerned, with their usual business sagacity, did not invest money on a mere belief. They set to work and collected all the registers of Friends in different parts of the kingdom, with births and deaths, from which a table was prepared showing that at birth the expectation of life was:[1]

At 5 years	. . . .	41.8 years.
" 10 "	. . . .	45.3 "
" 15 "	. . . .	42.1 "
" 20 "	. . . .	39.2 "
" 30 "	. . . .	33.3 "
" 50 "	. . . .	21.2 "
" 60 "	. . . .	14.7 "

The tendency now is to accumulate the best and the worst of the race in the cities. They draw to them the most enterprising, vigorous and prudent, whose tendency is to late marriages and few children, and thus tend after a time to lower the standard of the race. Where the tendency is to replace a feeble and lower race by a better one, there is progress; where the tendency is the reverse, there is decay. The hope that by increased knowledge, charity, and coöperation, the feeble, the sickly, and incompetent can be so cared for that they shall become strong and vigorous, is that held by most men of the present day, but there is nothing in the laws of heredity which gives any foundation for this hope.

What is to be the outcome of this modern civilization? "Its enemies are not without, but within; not savage nations on its borders, but dwellers in its own cities." The general tone of modern European literature is pessimistic as to the future, filled with doubts and fears as to what the coming supreme democracy will do. In this country it is more hopeful, and looks forward to progress in improvement in the physical conditions of the race, though admitting the dangers and difficulties which this very physical improvement tends to produce. But, whatever be the views of individual thinkers and writers, on one point all can agree, and that is as to the desirability of having at our command definite, positive information as to the character, amount, and set of currents of this stream of human life in different countries and localities. An important part of such knowledge is that which relates to the composition of, and changes in, the population in different countries, which is the special field of vital statistics.

ORIGINAL ARTICLES.

DIRECT HERNIOTOMY.

With Reports of Cases.[2]

BY W. O. ROBERTS, M.D.,
PROFESSOR OF SURGERY IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY AT LOUISVILLE.

DIRECT herniotomy, done with the view of effecting a radical cure, is a subject of such importance that I venture to give a brief abstract of the work of this kind that I have done during the past fourteen months.

The number of cases I offer is small, comprising a total of but ten, in which I did eleven operations. Seven cases occurred in females and three in males. Three were cases of umbilical hernia, three inguinal, and one ventral. Six of the operations were done during strangulation, while five were performed for troublesome, irreducible hernias.

In the six cases of strangulated hernia the sexes were equally represented; three were inguinal, two femoral, and one umbilical. In five of them the operation for radical cure was done; the remaining case was one of strangulated hernia, where stercoraceous vomiting existed for eight hours before it was seen. General peritonitis was evident at the time of the operation. Much blood-stained fluid escaped when the contents of the sac were returned. Death followed in thirty-six hours. I have since thought that if, after returning the contents of the sac, I had done a low median laparotomy and washed out the peritoneal cavity, the result might have been different.

The four cases of irreducible hernia were all in females. Two were umbilical, one femoral, and one ventral. In one of the former a second operation was made necessary by the hernia recurring at the end of six months. The tumor also re-formed at the end of ninety days in the case of femoral hernia. A second operation was not done here, because the patient has been able to get along comfortably with the aid of a truss. The remaining eight cases continue well to the present date. I have already stated that one of the cases died. The patients were aged, respectively, twenty-four, twenty-six, forty, forty-six, forty-eight, fifty, fifty-five, sixty-two, seventy-six, and eighty-four years. In the patient aged eighty four years the hernia was inguinal and strangulated, and though presenting on the left side, both the cæcum and appendix were found in the sac.

The following is a very brief description of the different procedures practised in the several cases: In each the sac was first cleanly dissected out and not opened until hemorrhage was entirely checked. Both in the ventral and umbilical hernias the integument and fascia were divided by an elliptical incision. After opening the sac all adherent omentum was tied with catgut and excised. The remaining contents were then returned into the cavity. In one case of umbilical hernia the neck of the sac was tied close to the margins of the opening and cut away immediately in front of the ligature. The stump was then fastened tightly in the opening with silkworm-gut sutures, and the wound finally closed by interrupted sutures of the same material. In this case no suppuration occurred, but, as already mentioned, the hernia recurred at the end of six months. In

[1] See Insurance Cyclopedia, vol. v. p. 144; also, table on page 147, comparing expectation of life of Friends with those of the general population, and showing a decidedly higher average for the former.

[2] Read before the Southern Surgical and Gynecological Association, at Nashville, Tenn., November 12, 1889.

both the other umbilical and in the ventral hernias, the neck of the sac was excised on a level with the abdominal opening and sutured with catgut. The opening itself, after its edges were freshened, was closed with the continued suture of chromatized catgut in the ventral hernia and aseptic corded silk in the umbilical cases. The superficial tissues were brought together by silk sutures, which were continued down to the aponeurosis.

In the femoral hernias I adopted the practice of Mr. Mitchell Banks, which consists in freeing the sac up to the crural ring, tying it with strong catgut, and then cutting it away. No attempt was made here to sew up the ring.

In the cases of direct inguinal hernia, after tying the neck of the sac just within the ring, and removing everything in front of the ligature, the ring was closed with catgut sutures.

In the cases of oblique inguinal hernia I did Mr. Ball's operation, which, I hardly need say, consists in freeing the neck of the sac up to the internal opening, ligating it, cutting away everything in front of the ligature, then twisting the neck upon itself to effect closure of the peritoneal orifice, and finally stitching the stump to the pillars of the ring to guard the neck against untwisting itself.

Drainage by tube was secured in one case only. In the remaining operations drainage was effectually accomplished through the lower angle of the wound, this being left open for the purpose. Suppuration proper followed in no case. A small amount of pus, strictly limited to a suture puncture, was observed in two cases only—one an umbilical, the other a ventral tumor.

A detailed description of the several methods now employed for the radical cure of hernia is unnecessary and foreign to the object of this paper. Using the most general terms, however, I may say that in the operations for umbilical and ventral hernias, the difference, in any practical sense, is, after all, but little. Ligation of the neck of the sac, stitching it when excised, plugging the aponeurotic opening with the sac, closing the opening with sutures, really covering the several operations. The suture material itself is somewhat more varied, embracing chromatized catgut, kangaroo tendon, silk, and silver wire.

There is a greater diversity of practice when inguinal and femoral hernias are the subject of operation. Here, in order to close the internal opening, ligatures, sutures, twisting the neck of the sac, and tucking the sac into the orifice are used; while as to the sac itself, it is removed or left undisturbed after dividing it in front of the ligature, or sutured or quilted to the pillars of the external ring. The manner of dealing with the ring also varies. Some surgeons suture it, others leave it without sutures, while others split the entire canal and plug it with iodoform gauze, that it may close by granulation. Of one and all of these procedures it may truly be said that the prime object is to effect adequate closure of the abdominal orifice of the sac, and, by means of the needed plastic material, impart to it the strength and solidity necessary to keep it closed. The operation done and recovery effected, the question of whether the parts should be reinforced by a truss arises; and here again practice varies, some surgeons asserting that the pressure of the truss causes absorption of the inflammatory exudation, and thereby increases the probability of recurrence of the hernia; while others are equally positive that such is not the fact, but that a properly adjusted truss unquestionably tends to prevent the tumor re-forming. In a single word, however, it may be safely said that whatever operation selected, and however skilfully executed, a considerable percentage of relapses occur, and there is no procedure which is wholly devoid of danger.

I will now give an abstract of the several cases to which I have referred in the foregoing:

Case I.—Mrs. D., aged fifty-five years. Right femoral hernia for ten years. Became strangulated forty-eight hours before I saw her, vomiting from the beginning, and stercoraceous for the past eight hours. Great abdominal distention and tenderness. Temperature 101°; pulse 120; skin clammy. Herniotomy at 1 P.M., June 1, 1889; Drs. Clemmons and Chenowith assisting. Tumor small. Knuckle of intestine completely filled the sac and so adherent as to require great care in its separation. The knuckle, though quite dark in color, was not gangrenous. When it was returned a considerable quantity of reddish fluid escaped from the peritoneal cavity. This led me to leave the neck of the sac open and introduce a rubber drainage-tube into the peritoneal cavity. The vomiting soon ceased, but diarrhœa with copious green stools followed, and death occurred thirty-six hours later.

Case II.—Mrs. H., aged fifty years, suffered with a left femoral hernia for two years. Never wore a truss. Tumor descended only after violent straining, until now patient had been able to effect reduction without difficulty. Strangulation occurred June 10, 1888—thirty-six hours before I saw her; stercoraceous vomiting for the last six hours of the time. Slight abdominal distention; no tenderness. Temperature normal; pulse 112. On exposing the sac I found the condition of the hernial contents similar to those of the preceding case, though very little fluid escaped from the peritoneal cavity after the return of the hernia. The neck of the sac was ligated close to the femoral ring and the portion in front of the ligature excised. Recovery good. No recurrence up to date. Patient of Dr. Cox, of Cox's Creek, Ky.

Case III.—Mr. G., aged eighty-four years. Left inguinal hernia for past forty years; always used a truss. Hernia became strangulated June 30, 1888, twelve hours before I saw him. No stercoraceous

vomiting; temperature normal; pulse 78. Contents of sac: cæcum, appendix cæci, and a small knuckle of ileum. Patient still living, with no recurrence. Patient of Drs. Grant and Palmer.

CASE IV.—Mrs. I., aged sixty-three. Umbilical hernia of ten years' standing. Had been strangulated ten hours before I saw her. Contents of sac: intestine and omentum, the latter adherent to the sac. Recovery; no recurrence. Patient of Drs. Grant and Palmer.

CASE V.—Mrs. B., aged fifty-two years. Large irreducible right femoral hernia of five years' standing. The tumor had been increasing in size for two years, and was so painful as to incapacitate her for her household duties. Operated August 15, 1888; recovery. Recurrence of hernia the latter part of the following November. She declined a second operation, but has gotten along comfortably since with the aid of a truss. Patient of Dr. E. L. Pearce.

CASE VI.—Mrs. J., aged fifty-eight years. A small, irreducible umbilical hernia of one year's standing; very sensitive to touch. The patient had colicky pains whenever she attempted any kind of work. Operated December 19, 1888. Contents of hernia: omentum, which was adherent to the sac. Hernia returned eight months after. A second operation on July 3, 1889. No recurrence to date. Assisted by Drs. Pearce and Evans.

CASE VII.—Mr. M., aged twenty-four years, had a small, oblique, inguinal hernia occurring after a violent muscular effort in January, 1889. It was replaced and gave no further trouble until the following March; while he was straining at stool it descended. Three hours after the protrusion occurred he came to the University, being in great pain. He had not vomited. The tumor was about the size of a hen's egg and quite tense. Failing to reduce it under chloroform and aspiration, I operated. The sac contained a small quantity of reddish serum. Immediately after the operation the patient was taken in a conveyance three and a half miles, where he came under the care of another physician, who reported a quick recovery. The further history of the case I do not know.

CASE VIII.—Mrs. T., aged thirty-three years; weight 212 pounds; married, but no children. Had ovariotomy performed in 1883. At the lower end of the cicatrix a small hernial protrusion formed soon after the patient began going about. This steadily increased in size, in spite of many appliances. In April, 1889, the tumor had reached the size of a small cocoanut, and the abdominal cicatrix was stretched almost to the last degree. On April 15, 1889, I did herniotomy. I have previously told how the operation was done. Recovery complete; no recurrence to date. Assisted by Drs. Pearce and Evans.

CASE IX.—Mrs. M., aged sixty. An irreducible, umbilical hernia, of the size of a hen's egg, and of one year's standing; sensitive to touch, and quite painful when the patient did any manual labor. On September 29, 1889, I performed herniotomy. Contents of sac: omentum and knuckle of intestine, the former adherent to the sac. This operation has also been described. Uninterrupted recovery; no recurrence. Assisted by Drs. Pearce and Evans.

CASE X.—Mr. B., aged seventy-six; butcher by occupation. Had to give up business two years ago because of a troublesome right inguinal hernia. The hernia was strangulated in March last, but reduction was accomplished under chloroform six hours before I saw him. October 6, 1889, the hernia became strangulated. A faithful attempt at reduction under chloroform failing, an operation was urged, but declined. The following day the patient decided to have it performed. I did herniotomy forty hours after strangulation set in. Contents of sac: composed of a large knuckle of intestine, which was very deeply congested. There was about one-half an ounce of a reddish fluid and blood-clot in the sac. This operation I have described elsewhere. The patient, because of an enlarged prostate, could only urinate while standing; yet recovery took place without an untoward symptom. He made a quick recovery. No recurrence has yet taken place. Assisted by Drs. Rodman and Howard.

PRELIMINARY OBSERVATIONS ON THE MICRO-ORGANISM OF TEXAS FEVER.[1]

BY THEOBALD SMITH, M.D.,
OF THE BUREAU OF ANIMAL INDUSTRY, WASHINGTON, D C.

SOUTHERN cattle fever, or Texas fever, as it is more popularly known, is an infectious disease of the malarial type. The infectious agent, bound to a particular locality, is only temporarily transferred by cattle to places free from permanent infection. During the past summer healthy cattle brought from North Carolina, late in June, infected a small enclosed patch of pasture at the Experiment Station of the Bureau of Animal Industry. Of the native cattle placed in this enclosure at the same time, the first died late in August. Up to the last week in October, ten had succumbed to the fever and two recovered. The territory, even after the Southern cattle had been removed, was still capable of infecting fresh animals placed upon it. There was also a continual increase or accumulation of the virus in the enclosure, for the animals placed on the ground late in the season died after an exposure of but one-half or one-third the period which was necessary to destroy those exposed since early summer. The infection did not spread beyond the enclosure.

The first indication that the disease had entered the system and was there unfolding its destructive activity, was a continuous high temperature fluctuating very slightly and subsiding only when death or recovery ensued. The temperature rose from 101°–102° F., to 106°–107° F., and in the fatal cases remained high from four to fifteen days. After a variable number of days, the high temperature was accompanied by general weakness lasting but a few days, when death ensued. Had it not been for

[1] Read at the Brooklyn Meeting of the American Public Health Association, October 23, 1889.

the thermometer, the early stages of the disease would have remained unnoticed.

A few days before death, the urine became more or less deeply colored with hæmoglobin, and in nine out of ten cases the bladder after death contained deeply tinged urine. In the tenth case, hæmoglobinuria was present three days before death. The destruction of red globules causing this condition could be easily demonstrated by examining blood taken from an incision through the skin. In several cases, on the day before death,[1] the number of red globules had fallen to about one million in a cubic millimetre of blood, the normal being about five million. In one case, now recovered, the corpuscles were reduced in number nearly one-half several days before the temperature fell to normal, and a week later the number had not yet risen to three million. This enormous loss of red globules gave the blood an exceedingly thin, watery appearance.

At the autopsy, beside the condition of the blood as noted, it was found to coagulate rapidly and form clots of unusual firmness. Large clots in the ventricles of one animal which had died during the night cut like liver tissue. The following description of the most obvious lesions will apply with more or less emphasis to all ten cases:

The spleen is enlarged to several times its normal size. When incised, the tense capsule retracts and discloses a dark-red more or less disorganized pulp, occasionally running out as a semi-liquid mass. This engorgement is due chiefly to the presence of an enormous number of red globules. The liver is the seat of considerable disturbance. Its color is a yellowish-brown. The parenchyma is deeply bile-stained, and when examined under the microscope the finest bile canaliculi are found plugged in many cases with consistent, cylindrical masses of bile. We have, in fact, a complete pathological injection of the intra-lobular biliary system. The liver cells show more or less fatty degeneration. The bile in the gall-bladder is usually so thick that it scarcely flows. This is due to the presence of a large amount of solids in the form of minute yellow flakes. There is no obstruction to the flow of bile into the duodenum. The kidneys are in some cases suffused with the color of hæmoglobin, and the connective tissue around them distended with reddish serum. In some cases they are but slightly affected. The small quantity of albumin found in the urine may be accounted for by the hæmoglobin.

Lesions of the fourth stomach and intestines were either absent, or else did not differ much in degree from those observed in healthy cattle. In one case there were superficial ulcers in the fourth stomach. A more or less extensive ecchymosis of the duodenum is occasionally met with, more rarely in the cæcum. In none of the ten cases examined was there any appreciable jaundice.

I am fully aware that these facts, in much greater detail than my experience or my time will allow me to present them, have been before the public since 1868. My reason for bringing them up again is to connect the observations on the etiology to follow with certain definite characters of a definite outbreak, so that there may be no question raised in the future as to the nature of the disease from which the following facts were derived.

In investigations of this nature it is very desirable that all theories which may account for the disease process should be carefully tested. But the quantity of work to be done, if all are to be exploited at the same time, is so great that the work probably would end in a muddle. To the student of Texas fever several theories clamor for attention. First, it would not be out of place to do as some observers have done, and locate the cause of the disease in the organ most affected, such as the liver, and refer the destruction of the blood elements to the reabsorption of bile from that organ. This theory, however, does not seem tenable, because the visible sign of the reabsorption of bile, jaundice, is not constant in Texas fever and did not appear at all in the cases upon which our investigations are based.

If we make the destruction of the red corpuscles the starting-point of our theory, we have two alternatives before us. The specific germ may multiply in the digestive tract and there produce a ptomaine capable of dissolving red corpuscles when absorbed into the circulation. Those who are acquainted with the researches of Stadelmann, and more particularly Afanassiew, in Germany, will see the pertinence of this theory. These observers produced in dogs nearly all the lesions which I have mentioned as characteristic of Texas fever, by feeding varying doses of toluylene-diamine. The absorption of this poison caused rapid destruction of the red corpuscles followed by the injection of the bile canaliculi with thick bile, by jaundice and hæmoglobinuria. The other alternative would assume that the red corpuscles are destroyed by organisms in the blood itself. It will be seen on a little reflection, that to test the truth or falsity of these hypotheses would require diverging lines of research, especially when we bear in mind that there may be disease germs which can only be detected with the microscope.

In order to understand the results obtained from the investigations conducted in the laboratory of the Bureau of Animal Industry, it will be best to give a brief summary of the latter. In the summer of 1886, two spleens taken from animals which had died of Texas fever in Virginia came to the laboratory. Cultures from one gave a variety of bacteria.

[1] Several animals were killed in a dying condition.

From the other all media remained sterile. At the same time the following observations were recorded.

In or on many red corpuscles there are small round bodies, perhaps 1 μ in diameter, centrally or somewhat excentrically situated, which stain poorly in an aqueous solution of methyl-violet, very well in aniline-water methyl-violet. They then resemble micrococci in size and form. Unstained, they can be seen as mere transparent spaces in the corpuscles.

No opportunities were presented for the further study of the disease within reach of the laboratory until the summer of 1888, when an outbreak in Maryland, about fifty miles from Washington, furnished the material. Five cases were found in a condition fit for study, and various organs were taken to the laboratory in refrigerator cans designed especially for such a purpose.

From these, numerous cultures were made on different substrata, while the organisms of the intestinal tract likewise received due attention. In general, cultures from the spleen, kidneys, and urine remained sterile. From the digestive tract were obtained, almost pure, roll and plate cultures of a microbe probably identical with Escherich's *bacterium coli commune*. This organism was occasionally present in the liver and bile and very rarely penetrated into other organs in very small numbers.

During the outbreak studied this summer my time and attention were diverted into another channel. Cultures were made, however, from at least five cases upon such substrata as blood-serum, agar, glycerin agar, and bouillon peptone, with the same negative result. While cultivation demonstrated the absence of bacteria from the blood and internal organs, the microscopic examination was equally fruitless.

The negative outcome of bacteriological work in 1888, combined with a careful study of the pathological changes in the organs which came to the laboratory at that time, led to the inference that the disease must be due to a blood parasite which could only be detected by the microscope. It thus became essential to have the disease within reach of a laboratory, so that the blood could be carefully studied during the course of the disease, and the material from the internal organs obtained absolutely fresh. These conditions were fulfilled in an admirable manner, as you have seen, and the outcome has been the discovery of what we believe to be an organism within the red corpuscles of the blood. The intra-globular bodies observed in 1886 were found in all the ten fatal cases of Texas fever. It might be asked, Why was the organism not found in 1888? I would reply, that, owing to the condition of the material, I could place no reliance upon the studies of the blood elements, which even under the best conditions are very difficult. Hence no attention was paid to this subject, the time being devoted to bacteriological studies. In these days it is necessary first to demonstrate the absence of bacteria before other results are credited. I may say, however, that preparations from one of last year's cases, re-examined a few days ago, showed the intra-globular bodies as distinctly as could be desired, but in numbers too small to be detected by any but the forewarned. The observations thus far made upon the intra-globular bodies may be very briefly summarized.

In fresh spleen pulp they are visible as round or oval, nearly colorless spots from ½ to 2 μ in diameter on the disk of the red corpuscles, and always somewhat excentrically placed. Careful focussing leaves no doubt that they are within the body of the corpuscle. There may be but one, quite commonly two, and very rarely three, or four, in the same corpuscle. In organs kept in the cold for nearly two weeks they were still visible, but faintly, owing to the diffusion of the hæmoglobin around and perhaps into them.

When cover-glass preparations are dried, heated, and stained with the ordinary aniline dyes, these intra-globular bodies stain as readily as nuclei and bacteria, and hold the stain with a similar tenacity.

The smallest forms then appear like deeply stained cocci, about ½ to 1 μ in diameter, situated within the unstained circle of the corpuscle. Occasionally the bodies are nearer 2 μ in diameter, and then the staining may be less dense. Besides the spherical forms, ovoid forms are not uncommon. These usually occur in pairs within the same red corpuscle. A still rarer, pear-shaped form, is encountered in stained preparations of the blood. It is rounded at one pole, while the other is pointed and sometimes drawn out as a short filament. These forms quite invariably occurred in pairs, a corpuscle being occupied by a single pair. I am very much inclined to consider the pair as the result of a division of the single body within the globule. In one instance I saw the tapering ends of a pair apparently continuous. Each body was about 3 μ long; its greatest width, 1.5 μ. These are the largest I have encountered. This same pear-shaped form I have only seen in cover-glass preparations made from blood during life.

That these parasites have the power of changing their form I cannot affirm from direct observation. The following illustration seems to indicate that they may. In one of the animals attacked the disease ran a brief, acute course. It was killed when the rapidly falling temperature and the inability of the animal to rise indicated death before the next morning. The spleen and liver were flooded with the intraglobular bodies. Perhaps every fifth corpuscle contained a pair. Cover-glass preparations, dried at

the autopsy, showed the ovoid bodies very well. The kidney, for want of time, was placed in the cold. Twelve days later it was still in good preservation and preparations made at that time showed a large number of intra-globular bodies in pairs, but round. It is highly probable that they changed their form in the cold.

One other abnormal form found in the blood deserves mention. When dried cover-glass preparations are stained in Loeffler's alkaline methylene-blue, a few red corpuscles appear as if their surfaces had been dusted over with minute specks of coloring matter. Whether they are due to the anæmia, or whether they belong to the cycle of the parasite, remains to be determined experimentally.

As to the relative number of intra-globular bodies in the different organs of the same animal, the ten cases which have come under observation afford some noteworthy facts.

As a rule, there are very few in the circulating blood, whether taken from incisions through the skin before or during the death-agony, or from the heart after death. There are exceptions to this rule, however. In one case they were readily detected in the blood from a skin incision one day before the animal was killed. Blood from the right ventricle showed an enormous number of these bodies, in pairs, within the red globules.

As a rule, then, the circulating blood contains comparatively few parasites. They are filtered out by the spleen and the liver. They may be numerous in one or both of these organs, and practically absent in blood from the right ventricle. They are somewhat more numerous in the spleen than in the liver. This estimate may, however, be erroneous, owing to the larger number of corpuscles in the spleen pulp. I paid but little attention to the blood in the kidney. In two cases in which a very large number of parasites were found in spleen and liver, they were likewise very abundant in the kidneys. The red marrow of the ribs examined in four cases contained none.

There are also a few facts at hand concerning the relative number of parasites in different animals at the time of death. In perhaps one-half of the cases they were so few in number in the spleen that they might have easily escaped the attention of an observer searching for bacteria. In four out of ten cases the organisms were very numerous in spleen and liver, and could not well be overlooked. I found myself able to see them in a thin layer of fresh spleen pulp, with a dry apochromatic objective giving a magnification of not more than 250 diameters. In one case they were so few in number, even in spleen pulp, that a number of fields had to be scanned before any were detected. In this case the spleen was completely disintegrated. The urine, containing much hæmoglobin several days before death, was found of nearly normal color at the autopsy. The animal had evidently overpowered the parasites, but died from the havoc caused by them.

Concerning the transmission of the disease from cattle to other animals, we have only the following experiment to report: Spleen pulp from a steer just killed, and containing very many intra-globular bodies, was stirred up in sterile salt solution, and of this red liquid 1½ cubic centimetres were injected into the ear-vein of each of three rabbits. They remained permanently well.

The question now arises, What is this organism? We have seen it in but two recognizable forms, the sphere of slightly varying diameter, and the oval, pear-like form. I have already said that I believe these to be one and the same form, the latter a stage of division. This may or may not be true. The difficulties surrounding the direct observation of these minute bodies are very great, and we may have to rely upon indirect methods for more information. It might be argued that they belong to embryonic or degenerated red corpuscles. That they do not belong to embryonic forms I have been able to convince myself by examining the red marrow of the ribs, where the production of red corpuscles to take the place of the destroyed ones is very active. That they are not elements of degenerated corpuscles is too evident from what has been stated to require further discussion.

As to the true nature of the organism only conjectures are possible at this stage of the inquiry. It may be a phase in the life history of some of the lowest mycetozoa, such as the monadineæ, or it may belong to the group of sporozoa, some of which are pronounced cell parasites. As to the external characters of the disease, we have still to learn how the southern cattle carry the disease-germs while they themselves are immune, how the germs multiply on the pasture, and how they enter the susceptible organism of northern cattle; and whether or not they are ever eliminated from the diseased body to become a fresh centre of infection. These problems are intimately associated with the life-history of the parasite, and will finally be solved when its life is thoroughly known. They are the most important from an economic standpoint, and their solution will without doubt throw a strong light on human malarial diseases.

I think that we may safely formulate a simple definition of this disease with the aid of the foregoing observations. It is essentially a blood disease. There is a continuous or paroxysmal destruction of red blood-corpuscles due to an intra-globular parasite, and the disease results mainly from the incapacity of the internal organs, primarily the liver, secondarily the spleen and kidneys, to transform and re-

move the waste products resulting from such destruction. In milder cases the protracted anæmia, which results from the loss of corpuscles, may become the chief cause of exhaustion and death, even when the organs remain pervious and capable of carrying on their respective functions.

I have purposely omitted in this brief sketch, to refer to the former investigations of Texas fever. I need simply to say that as far as my own have been carried they contradict the results of those who claim to have found germs which can be readily cultivated. Their claims are just, so far as the finding of germs is concerned, but I do not doubt that they all have a *post-mortem* history, and that the investigators have been hampered by difficulties which it was impossible to overcome. There seems to be nothing which literally breeds bacteria so rapidly as a dead body in midsummer.

In conclusion I wish simply to mention a few facts already on record, bearing directly upon what has been claimed in this paper. In glancing over the very excellent report of Dr. Stiles to the New York State Board of Health, in 1867, I find the following statement:

"The red blood-corpuscles when examined immediately after removal from the body were shrivelled and crenated without artificial provocation. In one case many of the disks appeared to have lost a portion of their substance, as if a circular piece had been punched out, the addition of water failing to restore the disk to completeness."

I am convinced that Dr. Stiles had before him the intra-globular bodies, which must have been very abundant to call forth this statement. His description applies exactly to the appearance which was presented by these bodies in a few cases, more particularly when the bodies were relatively large. At that stage of our knowledge it was entirely excusable for Dr. Stiles to pass these bodies by without further attention.

In Virchow's *Archiv.* for January, 1889, V. Babes describes an enzoötic disease among Roumanian cattle along the banks of the Danube, which he calls epizoötic (*seuchenhafte*) hæmoglobinuria. The disease has many features in common with Texas fever, and many peculiar to itself. Toward the end of his investigations, made in the summer of 1888, Babes settled upon an intra-globular parasite as the probable cause of the disease. This he also found in masses outside of the blood-corpuscles in the œdematous hemorrhagic infiltrations about the kidneys, stomach, and intestines. He describes it as a diplococcus, is able to cultivate it, and produces in rabbits by subcutaneous injection a disease fatal in from 1½ to 2 weeks. Without going into detail, I am inclined to consider this parasite, as described by him, quite different from the one found in Texas fever. The Texas fever organism has thus far failed to multiply in culture media. Its appearance did at no time suggest the characters of bacteria. It has not been found outside of red blood-corpuscles in any appreciable numbers. Inasmuch as both his and our investigations must be regarded as just begun, the future will have to decide how near of kin these two diseases are.

THE TREATMENT OF HYPERTROPHY OF THE LINGUAL TONSIL.

BY RALPH W. SEISS, M.D.,

ADJUNCT PROFESSOR OF OTOLOGY IN THE PHILADELPHIA POLYCLINIC; LECTURER ON PATHOLOGY IN THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.

MUCH attention has been lately called to this condition, its frequent association with grave respiratory neuroses having attracted the notice of many able observers. Pathologically, it consists of an overgrowth of the glandular tissue at the base of the tongue, accompanied by a varicose condition of the neighboring veins. The new-formed tissue appears to be identical in structure with that found in so-called hypertrophy of both the faucial and pharyngeal tonsils, and may be described as hyperplastic adenoid tissue resulting from chronic *lymphadenitis*.

According to Lennox Browne, the cause is to be found in a general or local vaso-motor neurosis, associated, in females, with menorrhagia or amenorrhœa, and in a similar condition the result of alcoholism. The writer has found lingual tonsillitis to be very common in the over-worked and under-nourished, and quite frequent in patients in whom the gouty diathesis was markedly present; the immediate cause may be said to be dependent on a low bloodvessel tone, combined with a condition of chronic inflammation of the lymphatic tissue from various causes.

Very diverse and sometimes alarming symptoms have been noted by different writers. Gleitsmann mentions the sensation of a foreign body in the throat, *globus hystericus*, interference with voice, pain radiating from the throat, cough and asthma. Alarming dyspnœa and serious interference with deglutition, leading to profound depression of the general health, have been noted by the present writer and others.

It may be here mentioned that Dickson[1] considers varicosity of the ranine and lingual veins a diagnostic sign of value in relation to hemorrhagic lesions of the brain and cardiac weakness. Varicose veins in this situation are, in my experience, also associated with extreme frequence with "irritable heart" and general "neurasthenia."

The diagnosis of this disease depends on a thorough examination with the laryngeal mirror; the tongue is to be drawn well forward, and the glass

[1] Brit. Med. Journ., May 2, 1885, p. 888.

introduced with its lower edge held more forward than when making an ordinary laryngoscopic examination. Hypertrophy of the circumvallate papillæ, associated with dyspepsia, must not be mistaken for the affection we are considering; the lymphatic tissue is situated below the papillæ, at the very base of the tongue, in the glosso-epiglottic fossa. Greatly dilated vessels of a purple or blue color, and often above two millimetres in diameter, will be found radiating in a fan-like arrangement from the fossa over the base of the tongue, the lingual surface of the epiglottis, and the lateral pharyngeal walls. The hypertrophied lingual tonsil may encroach on the epiglottis to such an extent as seriously to hinder its movements and wholly fill up the epiglottic fossa; the two sides may also be unequally affected, and present the brawny look so characteristic of overgrowth of the *pharyngeal* tonsil. In very marked cases the epiglottis appears to be *imbedded* in the base of the tongue, and pressed backward so as to render laryngoscopy very difficult. In a case lately seen by me it was hard to pass an applicator down between the lingual surface and the epiglottis, even with the tongue drawn forward to its fullest extent. The condition is found generally in adults, and most frequently in women, commonly in individuals of poor physique and nervous temperament, who also suffer from rhinitis of advanced sclerotic type.

The above sketch seems to be a fair exposition of our knowledge of the pathology of this interesting subject; more extended observations as to its etiology are, however, much needed.

The results of *treatment* are very satisfactory, but the successful management of the disease calls for a considerable amount of manipulative care to secure good results. As to constitutional remedies, Delavan has obtained most excellent consequences from the administration of small doses of mercury combined with iodide of potassium; when associated with indigestion, he administered "the old-time mixture of rhubarb and soda." Strychnine, preferably given by hypodermatic injection, is advocated by many, and all writers advise tonics in one or another form. It is my habit to prescribe full doses of ammonium chloride and sodium bromide, five grains of the former and ten of the latter salt, three or four times daily. General faradization, regulated bathing, the use of the "salt towel" and similar frictions, and properly directed open-air exercise, are the best measures at our command for restoring vaso-motor tonus. The condition of the digestion must be carefully looked after, and long hours of rest and sleep should be insisted upon, if satisfactory progress is to be secured.

In a case of lingual tonsillitis lately under my care, in which paroxysmal dyspnœa, great emaciation, and blood-spitting were prominent symptoms, the difficulty of deglutition was so extreme, and the exhaustion so profound, that systematic feeding with fluids only was required for some months, the patient finally recovering perfectly. The administration of solids must be begun with extreme caution in such cases, as a serious attack of spasmodic dyspnœa may follow an unguarded indulgence, and the depressing effect of such a seizure on the patient, both physically and mentally, can scarcely be exaggerated. Fortunately such grave neuroses are but seldom found, and in milder cases it is sufficient to regulate moderately the diet. The great importance of the psychical element in these individuals must be remembered, and the patient's mind set at rest, so far as possible, regarding his condition.

Local treatment can only be properly carried out under the guidance of the laryngeal mirror and with approved apparatus. If the hypertrophied tissue is small in amount, applications of iodine, menthol, and thymol, in alcoholic solution or in glycerine, made directly to the diseased glands by means of a curved applicator or forceps, have an admirable effect in controlling symptoms and decreasing the size of the growth. Menthol—ten to thirty grains per ounce of alcohol and glycerin, equal parts—has been somewhat largely used by the writer in cases of dyspnœa and dysphagia, associated with lingual and faucial tonsillitis, with very gratifying consequences. The applications must be made directly to the diseased areas with great care, as, should the solution enter the larynx, alarming, possibly fatal, laryngeal spasm might result. Personally I prefer a light, curved forceps, in which a well-rounded pellet of cotton, saturated with the medicament, is firmly held; the patient holding his own tongue, the laryngeal mirror is introduced with the left hand, and the application rapidly made, under full inspection, with the right.

If the new growth be more advanced and dense in structure, very guarded applications of chromic acid, made only to a very small area of the hypertrophied tissue, or light touching with the curved galvano-cautery knife, at only a dull-red heat, are advocated. When the mass is of large size Gleitsmann uses his cautery snare, and removes it bodily. Whatever means be employed, the extreme tendency to hemorrhage and reactive inflammation of the organ operated upon should not be forgotten. The impossibility of carrying out antiseptic measures in this locality also adds greatly to the dangers of operative procedure, which should, consequently, never be attempted until all milder measures have been thoroughly tried.

All instruments can be used without pain to the patient under cocaine anæsthesia, repeated pencillings with a five per cent. solution being made at intervals of two or three minutes for some ten min-

utes before the operation. The after-treatment consists of the use of antiseptic and sedative gargles, or, far better, of the employment of similar solutions in the down-curved laryngeal atomizer. The tongue is drawn far forward, the instrument introduced, and the glosso-epiglottic fossa thoroughly washed out; this is also an admirable method of applying medicines to the diseased glands, prior to operative interference, in treating lesser degrees of adenoid overgrowth. Whichever therapeutic measure is adopted, the close relationship between *nasal* and pharyngeal disease must be borne in mind by the surgeon, and careful treatment directed to the nasal cavities must always precede operative steps. Especially are those rhinal conditions accompanied by the trickling of morbid secretions into the lower pharynx apt to be associated with advanced disease of the lingual tonsil, and in many cases the latter condition can be effectually controlled by treatment directed solely to the nares and pharyngeal vault. The well-known relationship of intra-nasal disease to inflammation of the *faucial* tonsils, and its close association with impaired vaso-motor tonus,[1] should be remembered in considering the etiology of lingual tonsillitis. The cause of tonsillar inflammation following nasal disease depends on the function of the tonsils being, in large part, to absorb the unused saliva, together with other faucial and pharyngeal secretions. Morbid and septic products are, of course, absorbed along with those of a normal character, inflammatory changes in the lymphatic tissue resulting. Not infrequently the source of the septic secretion will be found in obscure chronic laryngo-bronchitis of mild type, treatment of which is essential to the improvement of the patient's condition. Ten years ago Cohen noticed that enlargement of the lingual glands was not uncommon in *chronic laryngitis*, and gives an illustration of the condition in his classical work.[2] It is more than probable that the lingual tonsil shares with other "lymphadenoid" tissue the physiological property of absorbing waste secretions, and lingual (as well as faucial and pharyngeal) tonsillitis is best accounted for by so plausible a theory.

Hot vapor inhalations of terebene, creasote, and compound tincture of benzoin, in combination, have a very satisfactory influence in controlling the laryngo-bronchial affection, and, secondarily, the lingual disease. It has certainly been the writer's experience that these cases improve far more rapidly and permanently under the proper local treatment of the nares, pharynx, and laryngo-bronchial mucous membrane, along with the vaso-motor tonic measures, than under any therapeutic means directed only to the local disease or the general anæmia.

The greatly dilated veins so characteristic of the disease we have considered, I regard as symptomatic both of some "central" vaso-motor pathological condition and of the local inflammatory changes, and therefore calling for special direct treatment in rare instances only. In this connection it may be recalled that Browne[1] and others have noted slight enlargement, or at least congestion and sensitiveness to touch, of the *thyroid gland*, and, on palpation, the peculiar thrill of venous congestion, in this class of cases. Varicose veins in other regions of the body are also often present, and are "concurrent evidences of the dyscrasia."

49 N. SEVENTEENTH STREET.

[1] See Intra-nasal Sclerosis: Amer. Journ. Med. Sciences, Feb. 1889.

[2] Diseases of the Throat and Nasal Passages, 2d ed., p. 478.

CLINICAL MEMORANDA.

PATHOLOGICAL.

Sarcomatous Kidneys in an Infant.—On December 16, 1889, I delivered a woman, after great difficulty, of a dead male child, with an enormously distended abdomen, but otherwise well formed. From external examination, the distention was apparently caused by some solid organ or growth. The mother, though small, was well formed and healthy, has one healthy child six years old, personal and family history of mother and father good.

Autopsy: Weight of child twelve pounds. The distended abdomen was found to be due to large kidneys, whose external surfaces resembled fœtal kidneys in being slightly lobulated. One weighed a few grains more, and the other a few grains less than fourteen ounces avoirdupois. They were highly œdematous, and when cut, an inodorous, yellowish serum exuded, and continued to ooze until the organ was reduced to two-thirds of its former bulk. The renal substance was very spongy, and had the appearance of being made up of a reticulum of connective tissue, containing fluid in the interstices; the bladder contained no urine, neither was there any fluid in the pelves of the kidneys. It was not determined whether the ureters were patulous or not. All the other abdominal organs were apparently healthy. I failed to find, after careful and repeated microscopical examination, tubules or Malpighian bodies. Professor A. J. Ochsner, of the Pathological Laboratory of the Rush Medical College, Chicago, to whom one of the bodies was referred, writes: "The tumor is a sarcoma, but sufficient kidney substance is preserved to excrete sodium urate and uric acid crystals, which show in different portions of the section" (which he sent to me).

I. N. Danforth, in an article on "The Evolution of Cystic Kidney" (*Journ. Amer. Med. Assoc.*, October 20, 1888, p. 541), says: "At rare intervals an infant is born, or is instrumentally delivered, with an enormously distended abdomen, due to the fact that the kidney has been converted into a congeries of cysts. . . They are regarded, and probably correctly, as a peculiar form of cystic degeneration of the Malpighian bodies, but occa-

[1] The Throat, etc., 2d ed., p. 208.

casionally the convoluted tubules appear to be involved. . . The process probably begins during intrauterine life. . . The disease usually invades both kidneys."

Virchow claims that the cause is from an inflammation of the straight ducts, an embryonic nephritis. The walls of the ducts adhere, and the urine cannot escape from the kidney.

Roberts says: "Congenital cystic degeneration almost always involves both organs. . . Generally there is more or less increase of connective tissue. . . Occasionally the kidneys present a spongy or cavernous appearance on section, and the cysts are only visible on microscopical examination."

These extracts very plainly describe the conditions present in my case. Owing to the skrinkage of tissues during the hardening and staining process, the section sent me by Professor Ochsner shows the cellular elements very differently from the appearance of a fresh specimen.

I would add that neither during labor nor following the birth of the child did I detect the escape of any amniotic fluid. It was, emphatically, a dry birth. There was an excessive amount of vernix.

E. H. KING, M.D.

WEST LIBERTY, IOWA.

MEDICAL.

Note on the Treatment of Typhoid Fever.—During the past nine years one hundred cases of typhoid fever have been under my care. Doubtful and abortive cases are not included. With the exception of perforation and peritonitis, most of the usual accidents and complications have been observed. Prolonged rest and liquid food were always ordered, but these orders were not always obeyed. A temperature of 104° was nearly always reduced by means of internal antipyretics (quinine or phenacetine) in moderate doses.

Cold baths were not used in any case, and the so-called specific and antiseptic treatments were not attempted. No routine treatment, except the use of antipyretics in cases with a very high temperature, was employed. Violent symptoms were treated by means of the ordinary palliative remedies, and, for the most part, the cases were let alone. Stimulants were used very sparingly, and only in a few of the more serious cases. The rate of mortality was just two per cent.

The two fatal cases were both in very corpulent women, one aged sixty and the other about thirty-five years. The former died of heart failure, and the latter of "the direct severity of the disease" with coma.

From a very careful study of the cases, it seems to me probable that antipyretics carefully used in selected cases are not entirely without value. The results obtained seem to throw grave doubts on the utility of certain special modes of treatment which are advocated with so much noise in certain quarters. It is somewhat doubtful whether the mortality of typhoid fever, as observed in general practice, can be reduced much below two per cent. by means of cold baths, or, for that matter, by any other means.

O. H. MERRILL, M.D.

CORINNA, MAINE.

MEDICAL PROGRESS.

Prescriptions for Dysmenorrhœa.—For the relief of mechanical dysmenorrhœa, PROFESSOR GOODELL recommends the following mixtures:

℞.—Bromide of ammonium . . . ʒij.
Bromide of potassium . . . ʒiv.
Aromatic spirit of ammonia . . fʒvj.
Camphor-water, sufficient to make fʒvj.—M.

Of this, from a dessertspoonful to a tablespoonful may be given every two or four hours.

℞.—Aromatic spirit of ammonia, Spirit of nitrous ether āā fʒj.—M.

From a teaspoonful to a dessertspoonful every two to four hours.

℞.—Chloral . . . . . ʒij.
Bromide of potassium . . . ʒiv.
Camphor-water . . . . fʒvj.—M.

One tablespoonful every two to four hours.

If nerve prostration is marked, he considers a pill composed as follows very valuable:

℞.—Arsenious acid . . . . gr. $\frac{1}{10}$.
Dried sulphate of iron, Extract of sumbul . . āā gr. j.
Asafœtida . . . . . gr. ij.—M.

One pill after each meal, increasing to two pills after each meal.—*University Medical Magazine*, December, 1889.

The Prevention of Cinchonism.—DR. COGLITORE asserts that if quinine is administered with opium and ergotin the danger of cinchonism is avoided. The following is the formula which he uses:

℞.—Sulphate of quinine . . . grs. xij.
Bonjean's ergotin . . . . grs. v.
Opium . . . . . grs. j.—M.

Divide into three powders, of which one may be given every hour.—*Journal American Medical Association*, December 7, 1889.

Ointment for Scabies.—According to the *Physician and Surgeon*, the following is an efficient ointment for scabies:

℞.—Sublimed sulphur . . . . ʒij.
Beta-naphthol . . . . ʒj.
Peruvian balsam, Vaseline . . āā ʒj.—M.

One-third of this ointment should be rubbed into the affected skin on three consecutive nights, and washed off in the morning. After the first inunction the patient's underclothes should be boiled.

The Administration of Cocaine.—At a recent meeting of the New York Academy of Medicine, Section on Laryngology and Rhinology, DR. KÖHLER, the discoverer of the anæsthetic properties of cocaine, said that he never gave a patient a prescription for the drug, but that, if it was to be used, he himself gave it. For application to mucous membranes he does not use solutions

of a greater strength than five per cent.; which will accomplish as much as stronger solutions, though requiring a little more time.

Menthol in Asthma.—THEODORE JORES relates, in the *Memorabilien*, October 31, 1889, his experience with menthol in a case of asthma which had obstinately resisted all the usual methods of treatment. During a paroxysm he caused the patient to inhale an atomized 20 per cent. solution of menthol in olive oil. Relief was immediate. Dyspnœa was at once replaced by quiet breathing, and the respiratory sounds, which before the inhalation had been noisy and sibilant, became clear. Since then he has used the drug, in the same manner, in all cases of asthma under his care, and invariably with satisfactory results.

Treatment of Tubercular Prostatitis.— According to BERKELEY HILL, in a recent lecture before the Royal College of Surgeons, a good antiseptic solution in the treatment of tubercular prostatitis is two grains of sulphate of quinine to the ounce of water, two ounces being injected and left in the bladder after the pus and urine have been well cleared out by repeated small injections of boric acid solution. Still more antiseptic is an emulsion of iodoform. In cases of chronic cystitis, if the bladder is well washed, and two drachms of this emulsion injected, the most fetid ammoniacal urine is replaced by acid urine, fetor disappears, and the pus rapidly diminishes. In cases of cystitis caused by neglected prostatic retention, the urine in ten days becomes quite free from deposit, and even when a calculus, tumor, or malignant ulceration coexists, the improvement is rapid.—*London Medical Recorder*, August 20, 1889.

Treatment of Syphilis.—In a discussion on the treatment of syphilis at the International Congress of Dermatology and Syphilography, DR. MCCALL ANDERSON said that treatment should not be instituted until unmistakable symptoms of the disease were manifested. Mercury he believed was of value not only in the early stages, but often in tertiary syphilis, especially in lesions of the nervous system, and in cases where the iodides had been found powerless. Hypodermatic injections and inunctions of mercury he preferred to administration by the mouth. Dr. Langlebert said that treatment should commence with the prodromata of the secondary period—headache, fever, etc.—and should be continued during the whole period of eruption. He never gives mercury in the intervals between the manifestations on the skin or mucous membranes, as he regards the drug powerless to prevent such manifestations. On the other hand, the iodides are preëminently suited for chronic syphilis. The average time of treatment by the iodides should be about three years. Arsenic, iron, quinine, and sulphur are of value as tonic remedies, but should always be secondary to mercury and the iodides.—*Journal of Cutaneous and Genito-urinary Diseases*, November, 1889.

Pineapple Juice in Bronchitis.—DR. FLASCHER recommends the juice of the pineapple as an excellent remedy to soften the tenacious mucus of catarrhal bronchitis. In chronic bronchitis accompanied by dyspnœa he has also seen quite remarkable results. The juice is prepared by slicing the fruit, sprinkling with sugar, placing in a jar and bringing to a boil. The juice may then be poured into smaller bottles and kept for some time. It is prescribed in doses of from eight to ten teaspoonfuls.—*Lyon Médicale*, October, 1889.

Sparteine.—LEWASCHEW has recently made a series of careful observations upon the action of sparteine sulphate which he administered to twenty-two patients. In seven of the cases a more or less distinct therapeutic influence was produced, but in the remaining fifteen there was no perceptible effect produced upon either the action of the heart or the excretion of urine. These studies, together with a review of all the literature upon the subject, lead him to the following conclusions:

1. Sparteine strengthens hearts which are simply weak and arythmic, and if the pulse is rapid reduces its frequency.

2. In such cases it causes increase of blood-pressure with decrease or entire abolition of vascular engorgement, increased excretion of urine, lessening of dyspnœa, and removal of œdema.

3. Diuresis is not due to the direct influence of the drug upon the renal epithelium, but to the increased blood-pressure.

4. The effects of sparteine on the heart are similar to those of digitalis, adonidine, and strophanthus.

5. In many cases of long duration with considerable degeneration of the heart-walls, the last-mentioned drugs will be of more service.

6. For the latter reason sparteine should be used only in recent cases.

7. When good effects follow they are often observable within fifteen minutes after its administration.

8. The most generally useful dose is from one-fourth to one grain, three or four times daily.—*Centralblatt für klin. Medicine*, November 9, 1889.

Antiseptic Properties of Ammonium Carbonate.—GOTTBRECHT has lately experimented on the anti-fermentative action of ammonia. In his experiments he used carbonate of ammonium. A two per cent. solution of this salt delayed the decomposition of portions of fresh organs for nine days, a five per cent. solution for nineteen days, while a ten per cent. solution delayed it for sixteen days. In mixtures in which decomposition had already occurred, ammonium carbonate, added to the amount of five per cent., after a time killed the organisms; while a two and one-half per cent. admixture of the salt diminished their activity, smaller proportions of ammonium carbonate, one-fourth to one per cent., not only did not diminish, but actually increased the activity of the organisms, so that putrefaction became more rapid. Sodium carbonate added to the same degree of alkalinity did not show any anti-putrefactive effect.—*Alienist and Neurologist*, October, 1889.

Malarial Fever and the Puerperium.—DR. KRUSENSTERN, of Tiflis, publishes an interesting paper (*The Trans-Caucasian Lying-in Hospital Reports for* 1889, p. 59) on malarial fever appearing in the course of the puerperal period, in which he argues that (1) malarial fever generally, its remittent form in particular, does not in the least retard the post-partum involution of the womb, the organ decreasing in its bulk as it does under perfectly

normal conditions. Though several authors have described cases of uterine subinvolution in malarial puerperal women, the real cause in such cases should be sought, not in the malarial process or virus itself, but simply in an intercurrent endometritis accidentally complicating the fever. (2) On the other hand, malarial fever manifests a very marked influence on the functions of the mammary glands, since the appearance of the disease in puerperal women is invariably followed by a striking decrease in the secretion of milk.—*Provincial Medical Journal*, November, 1889.

Typhlitis and its Treatment.—In a discussion on this subject, at a recent meeting of the British Medical Association, Mr. Treves divided typhlitis into:

1. The mild form, which is the most common, amenable to simple medical treatment, usually terminating in resolution, and probably due to fecal accumulation in the cæcum. With this variety must also be included some cases of appendicitis which terminate favorably. The symptoms are less marked than in the graver cases. It is commonly preceded by constipation, rigors seldom occur, the swelling appears earlier and is comparatively larger, and doughy, is less fixed and cannot so readily be felt through the rectum. This is the form that physicians have in mind when opposing surgical treatment.

2. The severe variety, leading to suppuration and almost invariably dependent on disease of the appendix. The symptoms are more grave than in the former, and progress more rapidly. It is not usually preceded by constipation. There is often a history of cold or injury, pain is severe, vomiting frequent, tenderness and other signs of peritonitis pronounced, and fever high. The tumor makes its appearance more slowly, can usually be felt through the rectum, and is more fixed. The pain radiates to the testicles, thigh, or perineum, and is often accompanied by tenesmus and difficult urination. Pain on moving the right thigh may be great. At varying periods of time signs of suppuration appear. In some cases the first manifestations of the disease are symptoms of perforation, which may terminate fatally in two or three days, or even less. On the other hand, the symptoms may appear very slowly.

3. Relapsing typhlitis, due to disease of the appendix not sufficient to cause suppuration. If an abscess forms and the patient recovers, he is not likely to have another attack. This variety is usually independent of constipation.

The treatment of the mild form should consist in rest, small doses of opium, the least possible amount of fluid food, leeches or counter-irritation, and early evacuation of the colon by enemata.

Surgical treatment is required in the severe forms, but is seldom advisable before the fifth day. The exploring needle is to be condemned as a means of detecting pus. The incision should be made, if possible, directly over the seat of suppuration, a median incision being unsatisfactory.

As a rule, the most convenient incision is one made obliquely from above downward and inward, just external to the deep epigastric artery, terminating a little above and to the outer side of the middle of Poupart's ligament. A careful examination should be made for concretions or foreign bodies, and the condition of the appendix determined, if possible. These investigations should be conducted with the greatest care, the frail character of the abscess wall should be borne in mind, and regard be paid to the fact that it is made up of fresh adhesions, and often of loosely attached coils of bowel. The careless introduction of the finger may break down important adhesions, and cause a perforation into the general peritoneal cavity, or may bare a portion of the exposed cæcum of its serous covering. The less that is done after the abscess has been opened the better.

The cavity should be washed out with a warm, weak antiseptic fluid. A large drainage-tube is then introduced. If a diseased appendix is found, it should be ligated with catgut, unless it is entirely gangrenous or perforated close to the cæcum, in which case it should be left untouched.—*British Medical Journal*, Nov. 9, 1889.

The Bacillus of Whooping-cough.—DR. SEMTCHENKO has recently studied the bacteriology of whooping-cough, and in fourteen consecutive cases of the disease found the bacterium described by Afanasïeff, while it was invariably absent in patients suffering from other diseases of the respiratory tract. The author's conclusions are: 1. Afanasïeff's bacterium is specific. 2. The microörganism makes its appearance in the sputum during the catarrhal stage, about the fourth day of the disease, or possibly earlier. 3. Subsequently, its numerical strength increases, the intensity of paroxysms keeping pace with the increase. 4. The microbes disappear from the discharge, apparently, somewhat before a complete cessation of whoops (about the time when the number of paroxysms sinks to four or two per day). 5. When pertussis becomes complicated with catarrhal pneumonia, the bacilli in the patient's sputa show an enormous increase in number. 6. Altogether the pertussis pneumonia seems to be quite different from other varieties of pulmonary inflammation. 7. The *bacillus tussis convulsivæ* presents a great importance not only in etiological and diagnostic, but also in prognostic regards. 8. As to the behavior of the microbe toward antiseptic agents, its vitality is destroyed when the culture medium contains corrosive sublimate in the proportion of 1 to 60,000, or resorcin in that of 1 to 1200, or phenol in the same strength, or hydrochlorate of quinine of 1 to 800.—*London Medical Recorder*, November 20, 1889.

Peruvian Balsam in Diseases of the Respiratory Tract.—A correspondent of the *British Medical Journal* writes that PROF. SCHNITZLER, of Vienna, has used Peruvian balsam in various affections of the larynx, trachea, bronchi, and lungs, as well as those of the mouth, nasopharyngeal cavity, and nose. The results were good in the vast majority of cases. The drug was used in the form of inhalation, and was also applied with a brush, with the spray-producer, and internally. Finally, the most important constituent of the Peruvian balsam—namely, the cinnamein—was also tried. Inhalations of the Peruvian balsam did not differ in effect from those of turpentine, and they were equally indicated in affections of the bronchi and lungs. Inhalations of the emulsion of Peruvian balsam, however, were, according to Schnitzler, very efficacious in many diseases of the larynx and the trachea.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

Address the Editor: H. A. HARE, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, including Postage.

PER ANNUM, IN ADVANCE . . . . . $5 00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
NOS. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, DECEMBER 21, 1889.

PATHOGENIC PROPERTIES OF THE MICROBES FOUND IN MALIGNANT TUMORS.

PROFESSOR VERNEIUL, who for several years past has been prominent among those who have investigated the important question of the relation between microörganisms and malignant tumors, contributes in the *Revue de Chirurgie* for October, a valuable paper, reviewing briefly his earlier work and that of others supporting his views; presenting its practical or clinical application in anything but doubtful language. The points of the paper are clearly summed up in the following conclusions:

"1. The tissue of malignant neoplasms, cancers, sarcomata, epitheliomata, etc., may be invaded at a given moment by various microbes, of which neither the origin, the kind, nor the number can as yet be determined.

"2. This invasion, the causes and mechanism of which are equally unknown, may remain latent for a longer or shorter period of time, but also in certain cases may cause various modifications in the growth and nutrition of tumors, amongst other things, rapid extension, softening, and ulceration.

"3. Microbes are not met with in all varieties of neoplasms, nor in every tumor of the same sort, nor, yet, in all parts of an invaded tumor. One does not find them, for example, in lipomata, in pure fibromata, in beginning carcinomata, or in sarcomata of slow growth, in their normal condition, and covered with healthy skin; on the contrary, one finds them almost constantly in broken-down and ulcerated neoplasms.

"4. These microbes, besides the irritation and inflammation which they cause locally in the tissue of the invaded tumor, possess other pathogenic properties which may concern the entire economy. Thus, in all probability, they are capable of lighting up a more or less intense and irregular fever while still enclosed in a tumor undergoing rapid growth and softening. Moreover, when, during the removal of a tumor which contains them, they are mingled with the fluids of the softened areas, and permitted to spread themselves in the field of operation, they are capable of infecting and inoculating it so as to provoke a septic fever capable of causing death.

"5. The recognition of this latter fact, besides pleading in favor of the early removal of malignant neoplasms, so desirable from all points of view, indicates forcibly to surgeons certain preventive measures before and after the removal of tumors infected by microbes."

Thus it will be seen that Verneuil is not one of those who believe that the etiological relation between microörganisms and neoplasms is one of cause and effect. But it will also be observed that he ascribes to them when present in a growth results of the gravest consequence.

The above conclusions, verified by faithful investigation and drawn from abundant evidence, speak for themselves in a manner so plain as scarcely to need comment.

The support which is given to the plea for early surgical interference in cases of malignant tumor is positive; and the demand for extraordinary vigilance in carrying out antiseptic precautions during the removal of such growths, when they have undergone ulceration or softening, is shown to be of especial urgency.

THE TREATMENT OF GASTRIC CATARRH.

THERE is probably no one ailment of a non-organic character seen by the practitioner of medicine in every part of the United States which is more widely distributed, has a greater variety of symptoms, or is so discouraging to treat, than the one before us. Affecting alike the child and the adult, and the rich and poor, it follows as a result of all manner of exciting causes, from the taking of a simple cold to

the constant or sudden employment of substances irritating to the stomach.

From the title given above many pages might be written, none of which would be wasted by useless descriptions of the pathological changes and the variation in the results, and all of which might be filled with remarks upon the treatment of these conditions. The main object of this editorial is, however, to point out several facts generally overlooked in the treatment of gastric catarrh and in that of similar conditions in the smaller bowel. No disorder can be correctly divided into two distinct portions, called acute and chronic, more readily than this, and no complaint needs more correct diagnosis as to its exact stage than gastric catarrh. Totally excluding all forms of true gastritis reaching more deeply into the tissues than the mucous membrane, we find that very rarely do we see our patients in the acute stage of their attack, but rather in the subacute stage, when the separation of one state from the other is much more difficult. Under these circumstances exactitude in diagnosis is most necessary, for, if it still be in the acute stage, the treatment is utterly different from that of the later periods. If the acute stage is present, there is a condition of hunger, or anorexia, according to the peculiarity of the individual, but the taking of food increases any distress which may be present and delays the cure. Partial or total abstinence from solid food is urgent; extremely hot and cold fluids are of evil effect. The treatment of this stage is really made up of rest of the stomach and entire body, and in the use of mild nutrient drinks of a quieting character—such as predigested warm milk. A slight counter-irritant—such as a spice plaster over the belly may be used. These are points universally recognized, but there are others that are not. Constantly one sees some of the bitter tonics prescribed under those circumstances, with entire disregard of the name of the class to which those drugs belong, namely, the "tonic." The fact is forgotten that during the acute stage of an inflammation the tone of the part is above par, not below it, and that it is only after the inflammation passes by that a state of atony or depression is developed. By the use of a so-called tonic during the first stage we spur on to a more angry state a membrane too readily prepared to excessive activity of a perverted type. It is in the second stage, not the first, in which the pendulum has swung to the other side of the abscissa line of health that calls for a stimulating, toning, or tonic treatment—always to be given before meals, so as to affect the stomach itself when it is not covered by food. In the still more advanced stages of this condition, tonics become useless and incapable of action. As well might one supply a lancet for an amputating knife as to attempt to buoy up to the normal line by ordinary tonics a gastric mucous membrane so depraved and depressed into the slough of abnormal activity as is that of chronic gastric catarrh of long standing. If there be much eructation of yeasty matters, or sour gases, or other evidences of fermentation, let pills of nitrate of silver and hyoscyamus precede the meals by half an hour or an hour, or employ hydrochloric acid, in ten-drop doses, in its place, if such symptoms are not present. The remembrance of such ordinary rules of common sense will prevent a large amount of bad treatment and disappointment.

REVIEWS.

CHEMISTRY: GENERAL, MEDICAL, AND PHARMACEUTICAL. By JOHN ATTFIELD, F.R.S. Twelfth Edition, 8vo., pp. 770. Philadelphia: Lea Bros. & Co., 1889.

A work which has reached twelve presumably large editions since 1867 has demonstrated its suitability for the field for which it was designed. Attfield's *Chemistry* has, indeed, divided with Fownes's the honors of a standard work of reference for medical and pharmaceutical students, and has been rather better suited to medical and pharmaceutical laboratory work. In recording the appearance of the present edition, the reviewer can do little else than repeat the encomiums that have been bestowed upon all the editions of recent years. The work is comprehensive, and highly accurate. The practical, analytical portions are brought up to date. The theoretical matter is distributed over the entire work, different topics being introduced in association with those departments of descriptive chemistry by which they are best illustrated.

It is, perhaps, to be regretted that the author has not seen fit to adopt completely the modern nomenclature for salts, and to write, therefore, "magnesium sulphate" in preference to "sulphate of magnesium." The latter form, dependent essentially on a mistranslation of the French phrases, has been slowly disappearing from the writings of chemists, and the progress of the reform is delayed when a manual of acknowledged excellence and extended use tends to perpetuate the older method.

The arrangement adopted by Attfield has always been somewhat less systematic than other manuals of its size and style, and in the earlier editions this fact interfered with the satisfactory use of the work as a lecture companion or for regular study; but in the more recent editions, and particularly in the present, a copious index enables all necessary references to be made quickly. It is not unlikely that for the purposes of American medical and pharmaceutical students the more extended use of different sizes of type would be advantageous, and that

portions of the descriptive chemistry—for instance, the account of the various essential oils—would be more suitable for reference if expressed in condensed tabular form.

The mechanical execution of the book is excellent. The type is clear, and free from error. The work of revision for the present edition has been especially extensive in the department of organic chemistry. A valuable feature is the attention given to the etymology and significance of scientific terms. Such matters tend to give vitality to terminology, and to assist the student in remembering.

SURGICAL BACTERIOLOGY. By NICHOLAS SENN, M.D., Ph.D. 8vo., pp. 259. Philadelphia: Lea Brothers & Co., 1889.

BUT a short time since there was an almost universal smile of ridicule at the announcement of the discovery of the cancer microörganism, and now other writers besides our author deal respectfully with the idea, even if the most of them cannot accept even its probability. Reviewing with Dr. Senn the literature of this subject, and accepting his conclusions as to the utter lack of proof of the existence of this germ, one can scarcely help thinking, nevertheless, of what might have been the consequences had Scheuerlen's announcement been capable of corroboration. Such consequences have followed with uniform regularity the absolute acceptance of every specific microörganism; and with the same regularity have our various text-books, medical and surgical, been forced to general revision, or have been neglected as unsound and unscientific. With such circumstances in view, the appearance of such a work as Dr. Senn's seems well-timed and appropriate.

The author introduces his prime subject after a careful review of the literature of such general considerations as the hereditary transmission of microbic diseases, infection by microörganisms, and the localization and elimination of these germs. Inflammation, while recognized by the author as frequently of a simple nature, is evidently regarded from a surgeon's point of view as almost uniformly of microörganismal origin. Such view, too, is intimated in the definition of "that condition called inflammation, a restorative process which has for its object the repair of injured tissues, or the neutralization or removal of the primary microbic cause"—the specification of microörganisms as a primary cause being evidently introduced as a feature of importance in the definition. As secondary to microbic activity in the production of inflammation, and later in pus formation, the results of these activities, ptomaines, are accepted by the author; and the formation of inflammatory abscesses is regarded as practically never occurring without the presence of microörganisms or their results. The wound fevers are treated of in some detail. Septicæmia is recognized by Dr. Senn as occurring both clinically and experimentally either as a true progressive septicæmia caused by the introduction of microörganisms into the tissues, and their subsequent activities, or as sapræmia, a putrid intoxication in which the prime factor is not the bacteria, but ptomaines to which they have given rise, or to other substances the result of tissue disintegration. The origin of pyæmic disturbances the author believes to be due primarily to microörganisms different from those of septicæmia, but he acknowledges the possibility of its being identical with a form of sapræmia. In harmony with his belief in the duality of these two wound fevers, the author accepts Leube's combination of the two under the name of septico-pyæmia—a condition in which post-mortem appearance as well as clinical symptoms point to septic and purulent infection.

In the consideration of tuberculosis the author happily goes to some pains to point out the identity of this condition and that of lupus. In the surgical relations of tuberculosis Dr. Senn urges the frequent local occurrences of the process, and advocates a thorough surgical procedure in such instances as proper—although he adds a word of caution as to the likelihood of traumatic disseminations following operations imperfectly performed, both in tuberculosis and in other mycotic processes as well. Considerable attention is paid the subjects of anthrax, glanders, actinomycosis, tetanus, gonorrhœa, and syphilis, both in their general features and in their possible relations to surgical measures. Speaking of tetanus as an infectious disease, it has occurred to us as rather curious that more mention of the curious epidemics of this disease has not been made in the literature, epidemics, or possibly endemics, being frequently met with in certain parts of Cuba, Brazil, and other localities.

Considered generally, Dr. Senn's book is to be highly commended. While, of course, a work of its nature must, at this period of our knowledge of bacteriology, be largely a review of more or less conflicting literature, there need be no mistaking of the author's teaching and position in the mass of compilation necessary to the full purpose of the volume. The arrangement of the subject-matter is admirable; and the method of treating each subject, noticing the history of the microbe in question, the technique necessary to its demonstration, and the culture and inoculation experiments, must be regarded as serving an excellent object. The printing is excellent, and the illustrations add considerably to an already well-made book.

NEW INVENTIONS.

A NEW ROTARY PRISM.[1]

BY S. D. RISLEY, M.D.,
OPHTHALMIC SURGEON TO THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA.

I PRESENT here a new, and I think a more convenient, form of revolving prisms than those heretofore in use. Adopting the principle first put in practice by Volkmann, and latter by Cretes, two prisms of fifteen degrees each are superimposed, with their bases in opposite directions. They are mounted in a delicately milled-edge cell, with a diameter the same as those employed in the Nachet trial-glasses, which, therefore fits readily into the ordinary trial-frame. The milled-edge permits its convenient turning in the frame, so that the base or apex of the prism can be readily placed in any desired direction. The prisms are caused to rotate over each other in opposite directions by means of a milled-head screw projecting from the front of the cell. The strength of the successive prisms, resulting from the rotation, is read off on the graduated scale engraved on the front plate of the containing cell, extending from zero to thirty

[1] Presented at the American Ophthalmological Society, July, 1889.

degrees, the combined value of the composing prisms. (The strength of these prisms has since been increased so that the combined value is forty-five degrees.) As constructed, it will usually be found most convenient to place the instrument before the left eye, when the rotating screw, with the zero mark vertical, will stand at the upper and outer quadrant and can be readily manipulated without the hand of the operator obstructing the patient's vision. In this position, turning the screw to the right or left will cause the base of the resulting prisms to be inward and outward—that is to say, toward the nose or temple—as may be desired, when the strength of the adducting or abducting muscles is to be determined. If the vertical muscles are to be examined, the zero points may in like manner be placed horizontally, by simply turning the containing cell in the trial-frame. The main features of the instrument are well shown in the accompanying cut.[1]

Since writing the above description of the instrument I have found great advantage from its use in conjunction with the Maddox double prism. For this purpose I have had the latter mounted in a Nachet cell, which is then placed in a trial-frame, or preferably in some fixed form of apparatus, and the rotary prism on the opposite side. The revolving prism being at zero, any deviation of the images, in the resulting tripolopia, whether lateral or vertical, can be rapidly measured, its value being read off on the scale of the rotary prism. If preferred, the displacement prism can be employed as usual. If the double prism is used, it should have a strength of at least six degrees. The examination, especially when the triplopia test is employed, is greatly facilitated by some fixed form of apparatus, so that a constant relation can be maintained between the test object, the prisms, and the eyes of the patient, conditions not readily secured when the trial frame is used.

NEWS ITEMS.

Pharmacopœial Statistics.—The *National Druggist* states that according to statistics presented at the late Congress of German Naturalists and Physicians, there are now in use in the world twenty pharmacopœias, which, with their official supplements and commentaries, make about forty volumes. The French *Codex* contains the greatest number of subjects, viz., 2039, and the Norwegian *Pharmacopœia* the least, 519. In the French there are no fewer than 106 syrups, while the German has but twenty, and the Norwegian only 9. England is the only country that still retains the old system of weights, all the others using the decimal system. Only 150 articles or titles are common to all of the pharmacopœias.

Prosecution of Unregistered Dentists.—The New York State Dental Association has instituted proceedings against dentists who have failed to register. The prosecutions were begun in Brooklyn, five convictions being secured at the first day's trial. The minimum fine of fifty dollars was imposed; the largest possible fine for the offence under the registration act is two hundred dollars.

Football Fatality.—The *Lancet*, November 23d, reports a death at Bootle, England, following "rough play" at football. The player who lost his life was thrown violently and sustained an injury to the spinal cord. The index of the *Lancet* for the first half of 1889 shows that there have been sixteen paragraphs relative to the "accidents" in this athletic sport.

Hygienic Institute at Heidelberg.—The University of Heidelberg has inaugurated an Institute of Hygiene, with Professor Freidreich Knauff at its head. Dr. Knauff has written upon the subjects of hospital administration and the water-supply of cities.

Vienna Clinic for Mental Disease.—Dr. Richard von Krafft-Ebing, of Gratz, has been appointed to succeed the late Dr. Leidesdorf at the Vienna Clinic for Mental Diseases. A brochure on hypnotism by Professor von Krafft-Ebing has recently been translated by Dr. Charles G. Craddock, of the North Michigan Asylum.

The Care of the Insane.—At a stated meeting of the Chester County Medical Society, held in West Chester, October 8, 1889, the matter of the administration and medical treatment in the hospitals of the State for the cure of the insane was fully and ably presented by Dr. Hiram Corson, of Montgomery County. After full discussion, Dr. Jacob Price moved the following resolution: "That, in the opinion of this Society, the medical administration in these institutes should be separated from the secular duties pertaining to them; and, second, that medical care of female patients should be confided to properly skilled women physicians.

"*Resolved*, That the foregoing resolutions be embodied by the Secretary in his report to the State Society, and also that they be published in THE MEDICAL NEWS."

The Babies' Hospital.—Dr. L. Emmett Holt has been appointed attending physician to the Babies' Hospital, in place of Drs. Sarah J. and Julia McNutt, resigned. The Hospital is now permanently located in a building of its own, on the corner of Lexington Avenue and Fifty-fifth Street. It has a capacity of thirty-five beds, and is devoted exclusively to the care of sick children under two years of age. It receives any non-contagious case. In connection with the Hospital, a Training-school for Nurse-maids, which has been organized by Mrs. R. W. Chapin, will be opened in December. The Hospital has been in active operation in its new quarters since October. It was formally opened on December 6th.

Donation to the Pasteur Institute.—The *British Medical Journal* of November 9th states that a donation of

[1] Manufactured by Borsch & Rommel, Walnut and Juniper Streets, Philadelphia.

40,000 francs from English subscribers has been made to M. Pasteur, for the use of the Pasteur Institute at Paris. It was given in recognition of the services rendered to over two hundred British subjects who had been successfully treated there after having been bitten by rabid dogs. The *Journal* also states that some have proposed to establish a Pasteur Institute at Cambridge, and an estimate has been made that with the sum of £700 the running expenses of the first year can be met.

American Physicians Abroad.—A writer in the *London Medical Recorder* remarks, with some surprise, that at the last summer session of the Vienna University there were sixty-two American physicians and students in attendance, and not one from England on the catalogue. The physicians of the latter country seem to enter practice earlier, and do not give themselves that *Wanderjahr* "without which," thinks the writer, "no American physician seems to be able to settle down in practice." Little does that writer know of the hundreds of graduates of our interior colleges who never come even far enough eastward to get the smell of salt-water.

Yellow Fever in Brazil.—If sanitary reasons are allowed to rule, no naval vessel of the United States will be sent to the new Brazilian Republic at present. The condition of Rio, and of a number of other ports, in regard to the prevalence of fever, indicates a most unhealthy season. Whatever may be the indications from a political standpoint, the sanitary, prudential view would impel everyone to give Brazil a wide berth during the next six months.

Influenza in Paris.—It is stated that the epidemic of influenza in Paris is spreading. The disease has made its appearance in the barracks, the markets, and the Ecole Centrale. The medical report upon the epidemic shows that there are 670 cases among the employés in the great dry-goods store, the Magasin du Louvre. These are all cases of simple benign influenza, with an average duration of four days. Complications arise in some cases which make it more serious. In other large stores it also prevails. A dispatch from Berlin says that the disease is also epidemic in that city, and that Professor Virchow is one of the sufferers.

The "Italian Virchow."—Dr. Guido Baccelli, of Rome, Professor of Clinical Medicine, and formerly Minister of Public Instruction, is an extremely popular member of the party of progress. The *Lancet*, comparing Baccelli's position in Italy with that of Virchow in Germany, says that he is a public-spirited and intelligent statesman, and the friend and promoter of every measure of substantial reform. Dr. Baccelli is an ex-president of the Roman Academy of Medicine.

The Result of Recommending a Patent Nostrum.—According to the *Medical Press*, the Colleges of Physicians and Surgeons, Ireland, have resolved to restore the diplomas which they had withdrawn from one of their Licentiates, for having allied himself with Warner, the "Safe Cure" man, and having allowed his name to be used in the advertisement of the nostrum. The Licentiate asseverated that the letters purporting to have been written by him in eulogy of the "Safe Cure" were forgeries, and in order to prove this statement, he commenced action against the manufacturers, which, however, he was unable to bring to an issue for want of funds. Notwithstanding these representations by the Licentiate, and the most humble apologies offered by him for his conduct, the Colleges on two occasions refused to reinstate him.

The American Physiological Society.—The American Physiological Society will hold its annual meeting at the College of Physicians and Surgeons, New York, on December 27 and 28, 1889, and will join the American Society of Naturalists, which meets at the same time, in an annual dinner.

The International Medical Congress.—It is stated that the German Government has appropriated 80,000 marks ($20,000) for the International Medical Congress which meets in Berlin in 1890.

Surgeon Porter and His Resignation.—Surgeon Joseph Y. Porter, whose resignation from the Army was accepted by Secretary Proctor last summer, after a difficulty arising from his being ordered from Florida to New Orleans, has petitioned Congress, through Senator Gibson, to place him on the Retired List of the Army.

Diphtheria at May's Landing.—It is stated that diphtheria of a malignant type is epidemic at May's Landing, New Jersey. Strong efforts are being made to prevent the disease from spreading.

The Growth of Cremation.—According to *Science*, there are now thirty-nine crematories in various parts of the world. Italy has twenty-three; America has ten; while England, Germany, France, Switzerland, Denmark, and Sweden have one apiece. In Italy there were two cremations in 1876; the number rose to fifteen in 1877, and in 1888 the number was 226. Since 1876, 1177 cremations have taken place in Italy, while the combined numbers in all other countries brings the total only to 1269.

The Surgeon of the Emin Relief Expedition.—Mr. Henry M. Stanley thus eulogizes Surgeon Thomas H. Parke, of the English Army, who accompanied the Emin Relief Expedition: "The hardest-worked man in the expedition was our surgeon. Ever since leaving Fort Bodo in December Surgeon Parke attended over a hundred sick daily. There were all kinds of complaints; but the most numerous, and those who gave the most trouble, were those who suffered from ulcers. So largely had these drained our medicine chests that the surgeon had nothing left for their disease but pure carbolic acid and permanganate of potash. Nevertheless there were some wonderful recoveries during the halt of Stairs' column on the Ituri River in January. . . . I do not think I ever met a doctor who so loved his 'cases.' To him they were all 'interesting,' despite the odors emitted and the painfully qualmish scenes. I consider this expedition in nothing happier than in the possession of an unrivalled physician and surgeon. . . . "Nothing happened during the long journey from the Albert Lake to cause us any regret that we had taken this straight course, but

we have suffered from an unprecedented number of fevers. We have had as many as 150 cases in one day. Aukori is so beswept with cold winds that the expedition wilted under them. Seasoned veterans like the Pasha and Captain Casati were prostrated time after time, and both were reduced to excessive weakness like ourselves. Our blacks, regardless of their tribes, tumbled headlong into the long grass to sleep their fever fits off. Some after a short illness died; the daily fatigues of the march, an ulcer, a fit of fever, a touch of bowel complaint, caused the Egyptians to hide in any cover along the route, and, being unperceived by the rearguard of the expedition, were left to the doubtful treatment of natives with whose language they were utterly ignorant. In the month of July we lost 141 of their number in this manner."—*Lancet.*

Dr. H. Newell Martin's Lectures.—DR. H. NEWELL MARTIN is delivering a series of lectures upon the "Relations of Psychology to Physiology," at Johns Hopkins College.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 19 TO DECEMBER 9, 1889.

By direction of the Secretary of War, the extension of leave of absence, on surgeon's certificate of disability, granted LEONARD Y. LORING, *Major and Surgeon*, in S. O. No. 241, October 16, 1889, from this office, is still further extended one month, on surgeon's certificate of disability.—Par. 3, *S. O. 268, Headquarters of the Army, A. G. O.*, November 16, 1889.

MOSELEY, EDWARD B., *Captain and Assistant Surgeon.*—Is relieved from duty at Whipple Barracks, Arizona, to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer Fort Clark, Texas, for duty at that station, reporting by letter to the commanding general Department of Texas.—Par. 4, *S. O. 268, A. G. O.*, November 16, 1889.

FISHER, WALTER W. R., *Captain and Assistant Surgeon.*—Is relieved from duty at the Presidio of San Francisco, California, and will report in person to the commanding officer Fort Assinniboine, Montana Territory, for duty at that station, reporting by letter to the commanding general Department of Dakota.—Par. 4, *S. O. 268, Headquarters of the Army, A. G. O.*, November 16, 1889.

EBERT, RUDOLPH G., *Captain and Assistant Surgeon.*—The leave of absence, on surgeon's certificate of disability, granted in S. O. 109, May 11, 1889, from this office, is extended six months, on surgeon's certificate of disability.—Par. 13, *S. O. 270, Headquarters of the Army, A. G. O.*, November 16, 1889.

By direction of the Secretary of War, the extension of leave of absence granted VALERY HAVARD, *Captain and Assistant Surgeon*, in S. O. 240, October 15, 1889, from this office, is further extended one month.—Par. 1, *S. O. 272, A. G. O.*, November 21, 1889.

BALL, R. R., *First Lieutenant and Assistant Surgeon* (Fort Riley, Kansas).—Will proceed to Fort Sill, Indian Territory, and report to the commanding officer, for temporary duty at that post.—Par. 2, *S. O. 173, Department of the Missouri*, November 21, 1889.

By direction of the Secretary of War, JAMES E. PILCHER, *Captain and Assistant Surgeon*, is relieved from duty at Fort Ward, New York Harbor, and will report in person to the commanding officer Fort Clark, Texas, for duty at that station, reporting also by letter to the commanding general Department of Texas.—Par. 3, *S. O. 276, A. G. O.*, November 26, 1889.

COCHRAN, JOHN J., *Captain and Assistant Surgeon.*—Is granted leave of absence for fifteen days, to commence about December 1, 1889.—Par. 8, *S. O. 272, Division of the Atlantic*, November 27, 1889.

WOLVERTON, WILLIAM D., *Major and Surgeon* (Fort Douglas, Utah Territory).—Is hereby granted leave of absence for one month, to take effect on or about December 18, 1889, with permission to apply at Headquarters Division of the Missouri for an extension of seven days.—Par. 2, *S. O. 114, Department of the Platte*, November 30, 1889.

By direction of the Secretary of War, JOHN DE B. W. GARDINER, *Captain and Assistant Surgeon*, will be relieved from duty at Fort Reno, Indian Territory, upon the arrival at that post of Captain and Assistant Surgeon James C. Merrill, and will report in person to the commanding officer Fort Supply, Indian Territory, for duty at that post.—Par. 8, *S. O. 279, A. G. O.*, November 30, 1889.

MCCAW, WALTER D. *Captain and Assistant Surgeon* (Fort McPherson, Georgia).—Is hereby granted leave of absence for fifteen days.—Par. 3, *S. O. 276, Division of the Atlantic*, December 3, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING NOVEMBER 7, 1889.

RUSH, W. H., *Passed Assistant Surgeon.*—Ordered to U. S. S. "Saratoga."

URIE, J. F., *Assistant Surgeon.*—Detached from Coast Survey Steamer "Gedney," and ordered to the U. S. S. "New Hampshire."

BRYANT, P. H., *Assistant Surgeon.*—Detached from the Norfolk Hospital, and ordered to the Coast Survey Steamer "Gedney."

SMITH, GEORGE T., *Assistant Surgeon.*—Detached from the Army and Navy Hospital, Hot Springs, Arkansas, and ordered to the Naval Hospital, Norfolk, Virginia.

STONE, E. P., *Assistant Surgeon.*—After examination for promotion, await orders at Boston, Massachusetts.

GUNNELL, F. M., *Medical Director.*—Placed on the Retired List, November 27, 1889.

GAINES, J. H., *Surgeon.*—Ordered to duty at the Army and Navy Hospital, Hot Springs, Arkansas.

NEILSON, J. L., *Surgeon.*—Detached from the U. S. S. "New Hampshire," and ordered to the U. S. S. "Portsmouth."

BEYER, H. G., *Passed Assistant Surgeon.*—Detached from the U. S. S. "Portsmouth," and placed on waiting orders.

SIEGFRIED, C. A., *Surgeon.*—Detached from the Naval Station, New London, Connecticut, and ordered to the "New Hampshire."

HALL, JOHN H., *Passed Assistant Surgeon.*—Ordered to the Naval Station, New London, Connecticut.

KITE, I. W., *Assistant Surgeon.*—Detached from the Naval Hospital, Philadelphia, Pa., and ordered to the Naval Hospital, Pensacola, Florida.

ROSS, J. W., *Surgeon.*—Detached from the Naval Hospital, Pensacola, Florida, and placed on waiting orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM NOVEMBER 9 TO NOVEMBER 30, 1889.

FESSENDEN, C. S. D., *Surgeon.*—To inspect unserviceable property at Cincinnati, Ohio, November 18, 1889.

MURRAY, R. D., *Surgeon.*—Granted leave of absence for thirty days, November 30, 1889.

PURVIANCE, GEORGE, *Surgeon.*—Detailed as Chairman of the Board of Examiners, November 20, 1889.

GASSAWAY, J. M., *Surgeon.*—Granted leave of absence for twenty-nine days, November 13, 1889.

GODFREY, JOHN, *Surgeon.*—Detailed as member of the Board of Examiners, November, 1889.

IRWIN, FAIRFAX, *Surgeon.*—Detailed as Recorder of the Board of Examiners, November, 1889.

CARTER, H. R., *Passed Assistant Surgeon.*—Granted leave of absence for fifteen days, November 29, 1889.

NORMAN, SEATON, *Assistant Surgeon.*—Ordered to New York Marine Hospital, for temporary duty, November 21, 1889. To examination for promotion, November 22, 1889.

FATTIC, J. B., *Assistant Surgeon.*—Ordered to examination for promotion, November 22, 1889.

HEATH, F. C., *Assistant Surgeon.*—Ordered to examination for promotion, November 22, 1889.

MAGRUDER, G. M., *Assistant Surgeon.*—Ordered to examination for promotion, November 22, 1889. Granted leave of absence for twenty-seven days, November 29, 1889.

PERRY, T. B., *Assistant Surgeon.*—Granted leave of absence for twenty-five days, November 29, 1889.

COBB, J. O., *Assistant Surgeon.*—Granted leave of absence for thirty days, November 29, 1889.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, DECEMBER 28, 1889. NO. 26.

ORIGINAL LECTURES.

FACIAL PARALYSIS. PERIPHERAL EPILEPSY.

A Clinical Lecture,
Delivered at the Rush Medical College, Chicago, Ill.

BY HENRY M. LYMAN, M.D.,
PROFESSOR OF PHYSIOLOGY AND DISEASES OF THE NERVOUS SYSTEM IN THE RUSH MEDICAL COLLEGE.

FACIAL PARALYSIS.

GENTLEMEN: Observe the difference between the eyes of this patient, one of which is shut closely, the other partly open. This indicates weakness of the orbicular muscle of the eye, which is innervated by the seventh nerve, so that there is disease in the seventh, or facial nerve, which is distributed to the side of the face.

As he smiles one side of his face is drawn up, while the other is motionless, and it is impossible for him to pucker up his lips—a movement which is effected by the action of the orbicularis oris muscle. As he cannot close the eyelids on account of lack of contractile power in the orbicularis palpebrarum, so in the mouth he cannot adjust the lips because the right half of the orbicularis oris is paralyzed. He is able, you notice, to blow out his cheeks. He says that in eating the food gets between the teeth and gums.

The patient informs us that in June last he fell from a second-story window some twenty feet upon a stone slab, breaking his wrist. Blood came from his ears, which indicates that rupture of the tympanic membrane had occurred. Whatever hemorrhage took place must have been due to rupture of the bloodvessels in the middle ear.

This history leads us to infer that the injury was to the nerve where it lies in the bony canal, and that, perhaps, there was fracture of the bone with consequent compression of the nerve trunk. If this were the case we should expect the chorda tympani to be involved.

His sense of taste is unimpaired on the left side, but on the right it is diminished. If in a case of this kind the sense of taste is preserved, we infer that the injury is outside of the point where the chorda tympani springs from the main trunk, and that the lesion is a peripheral one, involving one portion of the nerve, and leaving the other intact. Where the sense of taste is involved the lesion is nearer the brain than the origin of the chorda tympani nerve.

This patient perceives the taste of an acid applied to the right side of the tongue, so that the paralysis is not complete. There are some who believe that the glossopharyngeal nerve is the only nerve of taste, but this varies in different persons.

The structures of the inner ear are not destroyed. The probability is that the tympanum was ruptured, which was followed by thickening, so that the drum-head is no longer capable of taking up sound vibrations and communicating them from the ossicles of the ear to the internal structures.

What is the proper treatment for such a case? It is not an uncommon thing to find patients suffering with paralysis of the facial nerve consequent upon simple exposure to damp or cold, but such patients are predisposed to rheumatism and demand specific treatment. But it would be useless to treat this patient with salicylate of sodium, or with other remedies given for the purpose of curing rheumatism. You must recognize the fact that there is injury to the nerve within the bony canal through which the nerve passes from the base of the brain, and endeavor to remove the exudation that probably causes compression. It is possible that we may not succeed in doing this, for there may have been sufficient displacement of the walls of the bony canal to produce permanent compression analogous to what occurs in the spinal cord where there is caries of the vertebræ. You know how patients suffer from caries of the vertebræ. After a time the vertebræ collapse, an angular curvature of the spine is produced, and the cord is compressed at the point of curvature. The pressure is sufficient to cut off all functional power in the cord, and the lower part of the body is consequently permanently paralyzed. We have a similar condition of things in the case before us, and it is possible that we may never succeed in relieving the nerve from the pressure.

Mercury and the iodide of potassium are efficient for this purpose, and in this case I would advise doses of five grains of the iodide of potassium, and one-thirtieth of a grain of the bichloride of mercury. Let the patient make use of these remedies as long as symptoms of deafness or paralysis exist. Electricity should also be applied to the face. The faradic current should be used, not because it will cure the disease, but because it will keep the muscles of the face exercised. What we desire is to preserve the muscles from atrophy while we are endeavoring to relieve the nerve from pressure. This is the only line of treatment that can be used with any prospect of success in such a case.

EPILEPSY OF PERIPHERAL ORIGIN.

The next patient I present to you is a girl ten years of age. About a year age, while apparently perfectly well, she was seized with convulsions. The first attack came on about nine o'clock in the morning, the mother finding her lying on the floor. She bit her tongue, frothed at the mouth, and, her mother says, remained unconscious for half an hour or more. After recovering from the fit the patient continued in a more or less feverish condition the remainder of the day. This was doubtless a typical epileptic convulsion. The next day she had two convulsions, one immediately following the other.

It is important to ascertain, if possible, whether she had fever, or whether the pulse grew more rapid during

the attacks and remained so, because we must make a distinction between convulsions that are epileptic in their character, recurring rapidly one after another, and constituting what is technically known as the *status epilepticus*, in which there is a rise of temperature, and those cases where we have simply a succession of eclamptic fits unattended by any febrile movement. The former is much more dangerous to the patient.

The mother did not bring the child here wholly on account of the epileptic convulsions, and we learn that there are other interesting points in connection with the case furnished us by her physician.

The child, you remember, is ten years of age, and you observe that she presents a maturity beyond her years. The mother informs us that in her family the occurrence of puberty is earlier than in the majority of families. Usually menstruation does not develop before the twelfth or fifteenth year, but from the appearance and development of this girl, I should say the commencement of menstruation was not far distant. Again, her physician has made a vaginal examination, and has discovered an ulcerated condition of the cervix uteri. This seems almost incredible in a child of her age, but is, of course, possible, and does sometimes occur.

We do not know positively the cause of these convulsions, but the probability is that they are due to the ulcerated cervix. It must not be forgotten that in some of these cases we have hysterical epileptiform paroxysms, or there may be a combination of the two disorders in a delicate and exceedingly nervous organization, producing all the convulsive manifestations common to *hystero-epilepsy*. But in epilepsy we have certain marked symptoms which enable us to discriminate between it and true hysteria. *True* hysteria is very rarely accompanied by unconsciousness. In a complete hysterical convulsion the patient preserves a certain amount of consciousness; in fact, she knows under what circumstances the convulsion is to take place, and, therefore, guards herself against a fall when the fit comes on. Again, the tongue and lips are not bitten. There are some physicians, however, who claim that this latter may occur, but I should want strong confirmatory evidence to make me believe that a patient bites her tongue and becomes entirely unconscious in a true hysterical convulsion. Hysteria manifests itself in the day-time, during the hours when the nervous system is exposed to excitation; in other words, it belongs to the waking period. The convulsions do not occur during sleep. This patient has convulsions in the night and while asleep, which is characteristic of true epilepsy.

Whatever may be said as to the general condition of her nervous system, its excitability, perhaps its hysterical predisposition, I think we have in this case an element of true epilepsy governing and controlling the manifestations. If that be the case, where is the source of irritation that excites the convulsions? This is not a case of congenital epilepsy, for, according to the statements of the mother, it is only a year ago since the convulsions first manifested themselves. Having, as we are told, an ulcerated condition of the cervix uteri, the probability is that *there* was the starting-point of the irritations which were communicated to the brain centres and brought about the convulsive movements. We may call this a case of *peripheral epilepsy*.

The treatment should, of course, be directed principally to the peripheral organ, and the ulcerated condition of the cervix must be remedied before we can hope to relieve the convulsions. It is highly probable that the occurrence of menstruation and the periodical relief that is obtained through that function will help to relieve the patient of the seizures. She must be cured of all swelling, inflammation, and ulceration about the cervix. In addition, the ordinary treatment of central nervous diseases must be resorted to, which I have detailed in previous lectures.

CARTWRIGHT LECTURES.

Delivered before the
Association of the Alumni of the College of Physicians and Surgeons, New York, November 22, 1889.

BY JOHN S. BILLINGS, M.D.,
U. S. ARMY.

LECTURE III.

ON VITAL AND MEDICAL STATISTICS.

THOSE of you who are familiar with the history of medicine in the early part of this century will remember the great anticipations which were formed and expressed by prominent physicians as to the results which might be expected from what was called the system of statistical medicine introduced in the Paris school by Louis and his contemporaries. This was not exactly a new system, but rather an attempt to methodize an old one—*i. e.*, to present the experience of different physicians in such a way that comparisons might be accurately made and the results mathematically expressed.

In this so-called numerical method all the details of each case observed are to be noted, as far as possible, without any special regard to whether these details may appear to the observer to have any special connection with the course of the case or its termination, or not. When a number of such cases have been collected, they are to be compared in all their details, showing in round numbers how many present such and such particular circumstances, and how many do not.

In order to make a useful application of this method, it is, of course, necessary that the different observers shall be describing substantially the same thing; that is to say, the disease to be observed must present a definite series of symptoms, so that a person properly qualified will recognize its existence without any liability to error. It should also be a disease which follows a tolerably regular and definite course, having a commencement which can be recognized. Such forms of disease include the so-called specific diseases and acute affections of particular organs. The method is most applicable to surgical cases of all kinds, including those which come under the domain of the various specialties.

As regards details of pathological anatomy, it has been pointed out by Dr. Flint that the statistical method can only apply to those changes which can be appreciated by the senses after death, and that, there being but one constant lesion found in typhoid fever, viz., the softening of Peyer's patches in the small intestine, the statistical method gives us little assistance in the investigation of the pathological condition of this disease.

We may note, however, that if it be admitted that typhoid fever is due to a specific bacillus, as seems now

to have been fairly demonstrated, and that this bacillus has been discovered and verified mainly by the application of experimental methods, it is, nevertheless, true that the results thus obtained have met with a general and prompt acceptance, mainly because the application of statistical methods to the circumstances of outbreaks of this disease in different communities is in perfect accord with the bacillus theory of its causation.

This merely illustrates the general law that the experimental and the statistical methods must be used together, and that their results must be in accord to produce full confidence in the results obtained by either alone.

The sanguine advocates of the numerical system of Louis supposed that all that was necessary to discover all the laws with regard to the propagation of any disease, and the true value of any or of all methods of treatment proposed for that disease, was simply the collection by different observers of all the data which could be obtained from individual cases, and the tabulation of these, according to a certain fixed and almost mechanical system of permutations and combinations, by means of which the various symptoms are brought together in groups, in connection with the results observed, and that thus would be obtained a true scientific basis, or, as they commonly phrased it, "the science of medicine."

We can now see plainly enough that this is, from the nature of the case, impossible; that the data obtained by different men can hardly ever be made fully comparable; and that, however complete they may be, the number of factors which combine to produce such a result as the production of a particular form of disease in a healthy organism is so great that, from mere statistics of observation, we can never obtain any scientific knowledge as to the relative part which each factor has taken in producing the result. This can only be done by experimental methods, in which the influence of one particular factor can be applied and those of others eliminated as far as possible; and the great advances which have been made toward obtaining a scientific basis for practical medicine within the last twenty-five years are, in the main, due to the experimental method. So soon, however, as we have, by the investigation of particular cases and by experiments, obtained a more or less probable theory as to the cause and mode of diffusion of a particular form of disease, the outbreaks of that disease in a community afford an invaluable means, in many cases, of testing the truth or falsity of the theory.

It must be admitted that the probabilities of error are much greater in medical than in vital statistics, and this for a number of reasons. The first is, that no two observers examine or interpret a disease in precisely the same way, and hence it is extremely difficult to collect a mass of observations sufficiently large to form a basis for statistical reasoning. Those who wish to be scientifically accurate in the use of such material, are usually compelled to deal with a very limited number of observations, because they cannot obtain a large number upon which they can fully rely.

The best data are, for the most part, those which lie in the field of surgical observation, since here the symptoms observed, the methods of relief applied, and the results obtained, are tolerably definite, and there is not likely to be much difference in the methods of recording them.

The methods of medical statistics differ fundamentally from those used by the vital statistician in that they usually have no relation to the phenomena observed in the normal, healthy, living population. The physician inquires, out of a thousand cases of children or of old persons that have been treated, how many times this particular disease has been met with; or, in a given number of cases of this disease, what proportion have died. This method is, in fact, practically the only one which is available to the physician; but the vital statistician, if dealing with disease, will want to know the probabilities that a male between twenty and thirty years of age will contract a given disease, such as phthisis or typhoid fever; and for this purpose he wishes to know the whole number of cases observed in a given population, and the number of the population furnishing those cases, in order to establish the ratio.

Bertillon illustrates this in his comment that the small number of deaths of old men attributed to typhoid fever might lead the physician, from his point of view, to say that typhoid fever in old age is a rare disease; but the vital statistician might conclude that the rarity of the disease in old age was simply due to the small number of those living at that period.

In discussing the tabulation of the returns of cases of acute rheumatism, in the *Collective Investigation Record*, Dr. Whipham gives the number of cases in each occupation out of 655 cases recorded. Of these, 71 were domestic servants, 16 agricultural laborers, 13 farmers, 10 grocers, etc. He comments that the number of domestic servants (71) is a remarkable occurrence, and proceeds to account for it by the consumption of alcoholic drinks, etc.

It is evident, however, that absolutely no conclusions can be drawn from these figures, since there is no definite proportion between the number of domestic servants attended by the physicans who made the reports and the number of domestic servants in existence, nor is there any relation between any of these figures and the number of domestic servants attacked by rheumatism. The only way in which this factor could be brought in in such statistics would be with reference to frequency and character of complication, or to relative fatality of the attacks in comparison with other occupations.

The fact that in each case of sickness there are many different circumstances which combine to produce the result is not, as Louis remarks, a valid objection to the use of statistical methods for the purpose of estimating the influence and relative importance of each of these influences; it is rather an argument in favor of their employment. Counting is better than guessing, and when it gives contradictory results as applied to two groups of cases, it indicates that some circumstances have not been taken into sufficient account, and that further inquiry is necessary. In the body of the sick man, as in the test tube, like causes under like circumstances will produce like effects.

Admitting that the chances of error in medical statistics are very much greater than in those relating to vital statistics, it does not follow that they have no value. It simply increases the desirability of collecting a large number of facts before proceeding to draw any definite deductions.

In statistics in regard to therapeutics we have to take account of the various influences which the condition of

the organism exerts upon the results, before we can fairly estimate the action of the new and special influence which has been introducted in the shape of an action of a drug or a particular mode of treatment. In any event, such statistics, even when derived from a small number of cases, serve to indicate lines of investigation, and to ask questions, if they do not answer them.

The greater part of our pathology and therapeutics has not been derived from statistical observation. Whenever a necessary and logical connection between a particular cause and the resulting phenomena has been established, statistics are of little or no value in demonstrating the connection. In every case the result must follow the cause, as it does in a chemical experiment, and a few repetitions of such experiments give as great a degree of certainty as a thousand or more.

The chances of the occurrence of a certain event in relation to cause can only be mathematically calculated when the totality of the possible causes of the result remains the same under the different circumstances investigated. This is one of the chief reasons for the impossibility of drawing positive conclusions from medical statistics, properly so called.

The consequent condition is one that I have already mentioned, viz., the application of the law to large numbers and the consideration of the limits of positive error.

The services rendered by statistics to medical science are by no means so great as was hoped by those who first proposed the application of this method; partly from the nature of the case, partly from the wrong application of statistical methods to groups of cases to which they are in nowise applicable. What result, in fact, can we expect from statistics applied, for example, to a number of cases of fever before the distinction between typhus, enteric, and relapsing fevers was understood.

"The results of medical statistics will not apply to the treatment of any particular case. They can never prove that bloodletting should be employed in all cases of pneumonia, or that it should never be applied in any case of pneumonia. Even the results obtained from the most satisfactory medical statistics will only be found useful to the physician in directing his treatment, in the absence of any special indication in the particular case which he has before him."

The data upon which to base medical statistics must be obtained either from published records, from unpublished memoranda collected by means of correspondence or by the so-called collective investigation methods, or from personal experience. The published data include such records of private practice as are given in journals, transactions, monographs, etc., records and statistics of hospitals, statistics of public medical services, and of medical and life insurance societies.

In many respects the crude data, in the form of records of individual cases, are the most reliable, but the labor of collecting and combining them is great, and we desire, therefore, to use the statistical tables prepared by previous workers, as far as they are available, for the particular inquiries which we have on hand.

Detailed reports of cases, such as are suitable for use in statistical work, are not over-plentiful. In the majority of cases the individual data are not given. We have only summary statements of tables of results. This is the case with regard to much the larger part of the great mass of reports of results of hospital and asylum practice, either in the form of separate annual reports or in summaries for journals or societies. These reports give some information as to the prevalence of certain diseases in certain places at certain periods of time, and in this way have some historical value; but they do not show the proportion of cases of disease or death to the living population in which these occur, and very few of them give the data by sex and age in the manner required by the statistician. Some of these calculate death-rates with reference to the total number admitted during the year; others, to the total number treated, which includes those remaining on hand at the beginning and those admitted during the year; and others, to the total number disposed of during the year by discharge, transfer, or death. A few of them give the average daily number under treatment during the year, and the average number of days' treatment for each case, sometimes making a distinction of sex, but almost never of race or age.

Comparison of gross death-rates of different hospitals, however calculated, are of little value for the purpose of determining either the sanitary condition of the place, the skill of the medical staff, or the merits of the particular system of treatment, owing to the great variations in the class of patients admitted. Of course, the statistics of hospitals for special classes of diseases can only be compared with those of the same kind; and even for general hospitals, the fact that the gross death-rate of one is higher than that of another, proves very little.

In a paper by Dr. Guy on the rate of mortality prevailing in the general hospitals of London, he compares the death-rates of King's College Hospital, with which he was connected, for the first five years of its existence —1840 to 1844—with the five years from 1857 to 1861. During the first period it was an old building, in a bad locality, and greatly crowded, and without any reputation as a hospital or as a medical school. During the last five years it was in a new building with excellent sanitary arrangements, and with an excellent reputation. He calculated the death-rates on the number of admissions to the hospital. The rate for the first five years was 8.4 per cent.; during the last five years it was 10.85 per cent. He concludes that a higher rate of mortality may be due to causes very different to sanitary defects in the building and want of skill in the medical staff; and that in a large city, in the case of a hospital enjoying similar sanitary advantages, the rate of mortality is mainly determined by the reputation of its hospital staff among the public at large and among its own pupils, which reputation influences the proportion of grave and dangerous cases which are sent to it.

In comparing hospital death-rates, it is now generally agreed that it is best to make use of the death-rates in relation to the total number of persons disposed of by discharge, transfer, and death for a series of years. Comparison of the number of deaths with the admissions only is apt to give very misleading results. A better method than this is that of Bertillon, who adds to the number at the beginning of the year one-half of the sum of those admitted and of those going out. It is also desirable to know the ratio of deaths and discharges to the mean population of the hospital, which is obtained by dividing the number of days of treatment by 365; but in this connection it is to be remembered that when

the mortality is calculated with relation to the number of days' sojourn in the hospital, those physicians who keep their patients the longest will show the lowest death-rates.

In his prize essay on *Hospital Statistics*, Dr. Steele substantially agrees with the remarks of Dr. Guy above referred to, and says that the hospital which confers the greatest benefit upon the community is that having the highest death-rate, as it is the one which admits the most critical and incurable affections. As the population of a city increases, the demand for hospital accommodation also increases, and unless more of this is provided, the tendency is to select the more serious cases for admission, and thus to procure an increased mortality rate.

I cannot assent to the proposition that a high mortality is any proof of the utility of a hospital, or of the skill of its staff; but it is certainly not a proof of the contrary.

"In all large hospitals from one-half to three-fourths of the deaths in the surgical department are due to accidents. The ordinary death-rate of surgical cases ranges from 5 to 7 per cent. If the deaths from accidents be deducted from the total deaths in surgical cases, there will be but a small percentage left. The mortality of the non-accident cases averages from 4 to 5 per cent. But the fame of the hospital, the reputation of its staff, especially for difficult and hazardous operations, may tend to increase the ordinary death-rate."

An increased mortality in the surgical ward may be due to special provision for permanent residence of patients with incurable diseases, such as the establishment of a ward for cancer cases.

There have been a number of reports and discussions in statistical congresses and societies with regard to the best forms to be used in publishing hospital statistics. The following are the *desiderata* for hospital statistics as given by Miss Nightingale:

1. Remaining in hospital on the first day of the year.
2. Admitted during the year.
3. Recovered or relieved during the year.
4. Discharged incurable, unrelieved, for irregularities, or at their own request.
5. Died during the year.
6. Remaining in hospital on the last day of the year.
7. Mean duration of cases in days and fractions of a day.

In each of these headings the data are given for each disease, for each sex, and for each of a number of groups of ages; the primary object being to ascertain the total sick population—that is, the number of beds constantly occupied during the year for each disease and each age and sex; 2d, the number of cases of each disease for each age and sex submitted to treatment; 3d, the average duration of each disease for each age and sex; 4th, the mortality of each disease for each age and sex; and, 5th, the proportion of recoveries for the same.[1]

Prior to the discovery and employment of antiseptic methods in obstetrics the records of lying-in hospitals were very unsatisfactory. It is true that we have no very definite standard of death-rates in childbearing in private practice with which to compare them, but this rate is given by the Registrar-General of England as being at the rate of five per thousand children born alive for the 28 years, 1847 to 1874.

The summary of the returns of the extern maternities in connection with Guy's, Bartholomew's, and St. Thomas's Hospitals for the 21 years, 1856 to 1876, comprising an aggregate of 74,580 cases, gives a mortality of 4.1 per 1000.

The largest lying-in hospital and the oldest is that known as the Rotunda, or Dublin Lying-in Hospital. In 198,481 cases of confinement in that hospital, the death-rate was 13.2 per 1000.[1]

It is not an easy matter to determine what may be called the normal or average mortality of women in chilbirth in order to determine the probable utility of a particular mode of managing cases of labor, as, for example, the so-called aseptic method. From the mortality statistics of the late U. S. Census (Report on Mortality and Vital Statistics, Pt. II., lxx.) we find that in 1,577,173 births 5646 deaths of the women are reported, being in the proportion of 3.57 per thousand births. This proportion was higher in the rural districts than in the large cities, and in negroes than in whites.

For the same year (1880) the Registrar-General of England reports the death-rate of women in relation to births as 2.07 per thousand. If, now, we compare these figures with those given by obstetricians and physicians, we shall find that the latter give death-rates from two to four times as great. Thus, Duncan gives the death-rate in private practice as from 8 to 10 per 1000 births, while Le Fort gives the figures from maternity hospitals as 30,594 deaths in 888,312 births, or over 34 per 1000; while Ehlers, using the statistics of Prussia from 1816 to 1886, gives the rate as from 5.8 to 9.4 per 1000.

How are we to explain these differences? Is the reported great mortality in rural districts, in certain races, or in physicians' reports due to peculiarity in the cases reported, or to the surroundings, or to the method of making reports and collecting data? Evidently the latter is first to be considered. In the data furnished by the Census and the English registration reports, the cases attended only by midwives and "wise-women" are included as well as those attended by physicians, and it is among the negroes and the Germans that the proportion of cases thus attended is the greatest. Moreover, in the cities where there is a regular registration of deaths upon physicians' certificates there is less tendency to give the vague term of childbirth as the cause of death than in the rural districts where the cause of death is returned by non-professional persons; but this does not apply to England, and it is not probable that it greatly influences the results in this country.

The deaths reported in the census as due to childbirth are those which occur during or soon after labor, including those due to hemorrhage, exhaustion, acute uræmia, etc., while those which occur at a later period may be reported as due to peritonitis, septicæmia, etc., although the physician in reporting the results of his private practice would include all these as deaths due to labor.

While the physician will usually consider only the relation between the number of cases of labor and the number of deaths in childbirth, the vital statistician will

[1] See paper on Hospital Statistics and Hospital Plans, by Florence Nightingale: Transactions of the National Association for the Promotion of Social Science, 1861, p. 554.

[1] Summarized from Dublin Medical Journal, 1869, and from Dr. Johnston's Annual Reports from 1868 to 1875.

study the relations of deaths in childbirth to the number of women living between the ages of 15 and 50 years, or to the total number of deaths from all causes. The figures of the last U. S. Census show that of every 100,000 women between the ages of 15 and 50 living in our large cities 16.21 died in childbirth during the year, while in the rural districts the corresponding figure is 51.56.

If, then, we are to judge as to whether the death-rate in childbed in the practice of a particular physician is to be considered as high or low, we must first know whether the figures relate to hospital or to private practice, and, if the latter, whether it was in the city or in the rural districts. To obtain some standards for comparison, we may use the numerous reports found in medical literature, in which physicians have given the statistics of their private obstetrical practice, and compare the results with those given in the statistics of maternity hospitals.

For prisons and asylums the death-rates should be given for the average daily population in the institution, and not for the number of admissions or for the number of cases disposed of; but in these cases gross death-rates for the whole population are of very little use. It is necessary to have them with distinction of sex and age, in order to make comparisons with the death-rates of the general population coming under the same groups.

(To be concluded.)

ORIGINAL ARTICLES.

THE CAUSES AND TREATMENT OF INFLUENZA.

BY ROBERTS BARTHOLOW, M.D., LL.D.,
PROFESSOR OF THERAPEUTICS AND MATERIA MEDICA IN THE JEFFERSON MEDICAL COLLEGE.

Influenza considered from the historical standpoint.—The reappearance of influenza in one of its cyclic manifestations, or epidemics, is an interesting event. With the improved methods of study and determination of bacteria, its character of the development will now be arrived at with some certainty. Already the study is bearing fruit, and the pathogenic organism has been announced again as it was many years ago. All the facts in the behavior of successive epidemics can be accounted for on this hypothesis only: that some microörganism is the real *materies morbi;* and as no theory can be true that omits facts that are essential, and as it is not theoretical discussion I purpose entering on, I content myself with saying that there is every reason for the belief that some microörganism or its ova is deposited on the mucous membrane of the nares, bronchial surfaces, and fauces, which, proceeding on its course of development, induces a local irritation and systemic poisoning attended by the complexus of symptoms known as influenza. It is necessary, however, before we can finally accept an organism as the genuine one, that proper cultures be made

There are many singular points in the history of influenza epidemics which may be used here merely to illustrate the nature of the malady and its cause:

In the first place, as to the manifestations of the disease in history. Four centuries have certainly witnessed true epidemics, and the periods of recurrence have shown that a real plan has been followed; but there have also been numerous apparent visitations of the epidemic activity which can only be explained on the hypothesis of a minute organism.

There are, it is clear, two great periods of wide diffusion of the *materies morbi*—one in which the maximum length of the interval between the rise and spread of the influenza is from forty to fifty years, and the other from fifteen to twenty years. As, however, there are many minor epidemics, it must be explained how these are accounted for on the principle that a living organism—a microbe—is the morbific agent. The minor epidemics of variable periods are restricted to certain localities where the conditions of soil and climate, or other special influences, favor the stay of microörganisms—their reproductive activity and their action on the mucous membrane; but in these instances they do not develop, in the course of their physiological growth, sufficient momentum to spread beyond the parts to which they are restricted. Another restraining influence is the limitation of those local climatic peculiarities which have been the efficient cause of those favoring influences to be hereafter described.

It is quite evident that certain climatic conditions have existed in the areas of diffusion occupied by the microbe, as there are cycles of time connected with the changes in the "sun-spots." Herschel pointed out long ago that these cycles of sun-spots occupied periods of time of eleven years and seventeen years, which a common multiple will bring into harmonious relations with the periodical activity of the epidemic power or influence, and whatever climatic characteristics must exist to secure the necessary power of diffusion to the microbe or poisonous material, this power must be general or universal in our atmosphere to satisfy one principle—that is, the principle of universality—for no restrictions in the atmospheric areas exist as against the appearance of influenza.

The one great fact of the epidemic influence is its *universality*. The great epidemics have prevailed in all climatic areas from the equator to the poles, through isothermal, isotheral, and isoclinal lines, and the special peculiarity of these divisions, of the temperature lines, which would otherwise be considered accidental, is the extent of humidity, of rainfalls and fogs, and of those peculiarities of soil and climate set up by them. As respects the climatic changes, they must be such as have connection with great periodical disturbances in the great source of changes in temperature—the sun with its photosphere and magnetic storms.

It has often been remarked that the direction of prevailing winds may be wholly against the general direction taken by the microörganism in its diffu-

sion. This phase of an epidemic presents no difficulties, now that it is proved that the direction taken by the higher currents in our atmosphere may be pretty generally opposed to those of the air strata in which we live. The Eiffel tower has had a meteorological station on its highest point, and even at this point it has been ascertained that the prevailing wind is in the opposite direction to that on the earth's surface. The diffusion of a pathogenic microbe, the conditions below being favorable, may take place from a higher portion than it were otherwise possible to do and thus wide distribution be attained. As damp and foggy weather is the only variation in the usual course of things climatic in character, that seems to be a necessary condition to the development of the disease, we may assume that the diffusion of the germs is probably facilitated by this state of the atmosphere.

As regards individual susceptibility or insusceptibility, the only known conditions besides those above mentioned that appear to influence the attacks of influenza are infantile life and sex. An infant is, clearly, less liable to have attacks, and delicate women more susceptible than males. There is no difference due to condition of life, and those insanitary surroundings that increase the tendency to seizures of infectious diseases do not appear to have any influence over the progress of influenza.

It is conceded by Hirsch and Lombard[1] that the various epidemics have quite uniformly had the characteristic qualities exhibited in the above outline. That the pathogenic material exists in the form of a microörganism must be considered as the only true explanation of the nature of influenza, as studied from the historical standpoint. Not less, also, must it be the conclusion when the question is to be answered from the pathological standpoint.

Pathology and morbid anatomy.—In respect to its pathology, we find that epidemic influenza is allied to the recurring catarrh known as hay-fever, at one end of a series, and to diphtheria at the other end. In respect to the severity of the morbid complexus, the relationship with diphtheria is more intimate.

The changes in the tissue are in the same order as those attendant on an acute catarrh caused by such local irritants as the powder of ipecacuanha, the odors derived from certain flowers, and the pollen of grasses, giving rise to hay-fever as the hyperæmia and catarrhal process of those points of mucous membrane where the *materies morbi*—a microbe or poisonous matter produced by a microörganism is lodged. When such an organism or its spores come in contact with the mucous membrane, it begins its development—living and growing, and reproducing its own kind. As the mucosa is the soil from which it extracts its own nutriment, so to this soil it returns the product of its own physiological activity. The question whether a given germ itself caused any morbid complexus has been asserted and denied, but the weight of authority is unquestionably in favor of the view that ascribes the symptoms resulting from the action of germs to some product of their own growth. Numerous examples may be given, but a few of the more important must suffice. Thus in infectious diseases, a poison produced by a peculiar microbe is formed from the mucosa where it is deposited. It is held, for the most part, that the poison is a chemical one; that local ulcerations may be formed partly by this substance, and systemic action is caused when the poison enters or diffuses into the blood. The maladies caused in this way are typhoid fever, the eruptive fevers, and some others.

As respects the severity of the consequences which result from the action of specific microbes, there are various differences between the several forms both in the local and systemic actions. Thus in the case of Eberth's typhoid bacillus the local action is severe and the systemic also; but in the case of the germ of influenza the local action is far less important than the systemic disturbance.

The mucous membrane may be attacked at any point where the access of air is secured by the anatomical arrangements—the nasal, faucial, bronchial, and Eustachian tube tracts of mucous membrane and the intestinal canal. Here are to be seen the various stages in the process of mucous inflammation, according to the time of original contact—the dry stage of congestion, followed by increased secretion, first of serum and leucocytes, and, third, the addition to the second of the ordinary purulent materials. According to the severity of the disease is the extent of the mucosa affected. In the severer cases we find, besides the same changes of the mucous membrane, capillary bronchitis, catarrhal and croupous pneumonia, the products of the catarrhal process containing some peculiar opaque masses. Although catarrhal and croupous pneumonia are said to be "complications" they should be regarded as occasional conditions, and when present are, properly speaking, constituted parts of the malady. Whatever peculiar appearances in the products of the inflammation may be seen, are no doubt due to some form of the parasitic growth. The chief importance of croupous and catarrhal pneumonia is that the development of these, out of an existing catarrh of the bronchi, is frequently a cause of death.

Similar lesions are found in the œsophagus and stomach, and rather rarely are the intestines reached, whence it may be concluded that the parasites deposited on the mucous membrane of the mouth

[1] Traité de Climatologie, tome iv. p. 400.

are swallowed with food and drink, and thus come into contact with the mucous surfaces below.

The changes effected by the action of the morbific matter on diffusing into the blood have not been studied, and, also, the effects upon the circulating organs and the lesions of the nerve centres remain as yet unexplained. That the ptomaine formed by the development of the microbe exerts an influence on those organs upon which it seems to have a selective action can hardly be doubted; but until the special form of the microörganism has been determined the nerve pathology must continue obscure.

The symptom-complex of influenza.—This malady has the general character of an acute mycosis, has a local action on the point of deposit, forms a chemical ptomaine, and by the absorption of this the systemic affection results. It follows, therefore, that two kinds of symptoms result: local symptoms and systemic symptoms.

Influenza comes suddenly; goes as quickly. The least robust, at any age, and women seem to be the first victims. It is here a question of bodily condition, not of the sex. The large numbers simultaneously attacked attracts general attention, and thus those most impressionable are seized, the onset being facilitated by any depressing emotion like fear or illness. There is no rigor, properly to be thus designated, but rather a series of light chills and a feeling of heat therewith. Sometimes *malaise* of a general kind is experienced, but, like the attack itself, is short in duration—lasting but a few hours. When the air loaded with the microörganisms reaches a given population, down upon all human creatures fall these bodies, and by the air they are carried into all the recesses and crevices of the naso-pulmonary mucous membrane. This being a soil favorable for their growth and multiplication, these processes begin, and immediately a poison is formed and diffuses itself into the blood. Some local action is exerted by the poison, of a chemical nature, probably; but for the most part the production of this material necessitates the action of the germ on the parts where it is living and growing. Hence it is that a morbid state of these parts is induced.

With some bad feeling, not developed immediately, however, there are heat and burning of the nose and fauces, tickling with heat of the Eustachian tube, and a similar sensation in the tear duct. The eyes feel hot, the lids swell, and tears begin to flow. The most unpleasant of these sensations is a stuffing of the upper parts of the nares and even in the frontal sinuses.

With the first access of the nasal and faucial irritation comes the chilliness, which is followed by some feverishness, with more pronounced *malaise*, and, in general, the headache, weakness, and soreness of the members, especially of the larger joints. With the progress of the case in some epidemics there is considerable general weakness, even marked depression, of the vital powers. The pulse becomes small and weak, the mind gloomy, and restlessness ensues. There is little disposition to exertion at any time, and mental hebetude coincides with physical depression. The indisposition to exertion is a conservative state, in so far as quiet is necessary, owing to the enfeeblement of the cardiac ganglia and the centres of the respiratory and cardiac systems.

When a fatal termination is to occur, as a rule, an extension downward into the trachea and bronchi takes place. The cough in all cases has, at the outset, a brassy, rough, or ringing character; it is not paroxysmal; it is frequent, almost incessant, as is the tickling of the throat, the tickling of the nares, and the itching and tickling of the middle ear. With the downward spread of the disease a good deal of mucus is expectorated, at first grayish, tough, and gelatinous, becoming afterward merely purulent and watery, and rather rarely, brownish-gray, with crystalline masses mixed in. Rather rarely, however, casts of the lesser bronchi and bronchioles are brought up, after most prolonged and distressing coughing, and such an access is followed by feebleness and by extreme weakness. In fatal cases, as a rule, the phenomena of catarrhal pneumonia and of croupous pneumonia supervene; but, as they offer no special differences in their symptoms and course, they do not require further consideration here.

Course and duration.—The rapidity with which the disease supervenes—its preliminary development being hours, and its whole career but a matter of three or four days, is remarkable. It must be remembered, however, that those already suffering with an acute catarrh are apt to have the epidemic seizure fastened on it, or that the true influenza may excite, especially in those with a phthisical tendency, a catarrhal process, which, in the ordinary form, may continue. The variations in severity in the local symptoms, in the character of the cough, in the expectoration, are considerable in ordinary cases, and in those of mixed character cannot be reduced to fixed rules, especially in the phthisical and in those with disordered nervous systems.

As respects the heart and circulation, it is to be noted that at first the pulse is not much affected; a little fuller, with moderate fever, but in the severe cases becomes weak and often intermittent, changing to thready and extremely irregular in a few hours. As, in the days of the chief epidemics, the thermometer was not used, the only evidence in the matter of temperature is derived from the more or less graphic statements of the medical writers of the past generation. It was not often increased more than 2° F., we may suppose, and rarely above 5° F. when catarrhal and croupous pneumonia were added to the morbid complexus. There is reason to be-

lieve that in those cases characterized by the predominating nervous element headache, dizziness, mild delirium, pains in the limbs, and obstinate wakefulness, and most commonly seen, although extreme somnolence and prolonged sleep have been observed in many instances.

Relapses are common, usually each succeeding seizure being milder, but not a few pass by easy transition into chronic bronchitis, emphysema, asthma, etc. The secretion of the urine is generally unaffected, except by those simple changes belonging to a mild febrile attack; but in not a few, the urine becomes albuminous and scanty, and anuria is added to the other morbid conditions and symptoms. Obviously a catarrhal process so extensive and severe may contribute immensely to chronic disease of the middle ear, Eustachian tube, nose and throat, and thus permanently damage the parts.

In a small proportion of cases, the stomach is disordered, diarrhœa supervenes or a dysentery appears, all due to the microbes which pass down with drink or food.

Something may be said, and very profitably, of the catarrhal epidemic epizootic which prevailed amongst horses in 1870 or about that time.

As an owner of some driving horses, and needing their service, I was necessarily a close observer. The horses well fed and carefully "stalled" were much less severely attacked than those in crowded stables and badly used in all ways. All were weak and had an aspect of suffering, were cool to the touch, had a little fever, but usually a subnormal temperature, some swelling of the neck glands, and the other symptoms of a catarrh, including a very purulent discharge.

The mortality was considerable in the severer cases, and the causes of death were the same as in man. It appeared to me that this epidemic disease is the parent of the affection in man, but modified by transition through so many, it has become milder, and each succeeding epidemic is less aggressive.

In the case of my own horses, I found atropine sulphate an efficient remedy.

Treatment.—Though having had no personal experience the general principles are such as to permit an authoritative expression. When the great epidemic of 1845–46 prevailed, President Tyler's personal experience was so unhappy that the popular name of "Tyler's grip" was given to that epideimic.

Persons suffering from catarrhal affection of the naso-pulmonary mucous membrane should adopt the most effective means to keep in good condition —for the impressionability is increased by anything that lowers the vital tone. Are there not microbes that may be used to lessen this susceptibility and any special readiness to receive a new morbid process to be engrafted on the old? It seems to me that the best manner of securing immunity is by the inhalation of sulphurous acid gas daily when the approach of the epidemic renders it necessary, and by taking five grains of salicylate of cinchonidine three times a day, and by so living as to avoid taking cold.

When the attack has begun, it seems to me desirable to give one or two grains of calomel at night, inhale some sulphurous acid gas, and have the patient sit in a room where steam containing eucalyptol can be inhaled in large quantity.

Local applications are useful as furnished in gases, in vapors, and in powdered solids by the method known as insufflation.

Of the gases, sulphurous acid is one of the more efficient against such troubles as tuberculosis, where a conclusion is reached by test of cultures. To give this, burn some sulphur in an apartment. The amount of the gas to be inhaled depends on the person and his condition. To determine these points, trials are necessary. Ordinarily, some constriction of the throat and a pronounced metallic taste—"brassy"—indicate the limit. The frequency may be twice or thrice a day. Peroxide of hydrogen, oxygen, or ozone will no doubt act well in suitable cases.

The best vapor to use during the preliminary dry stage is steam, and the patient may inhale constantly by filling the air of the apartment. With steam may be included the vapors of creasote and oil of eucalyptus, or turpentine. A simple method of using these remedies is to put into some water a sufficient quantity of eucalyptus leaves and add from time to time creasote or turpentine, or both. The water in the vessel containing these medicaments is made to simmer all the time. The heat may be obtained from a gas stove a gas-burner, or the common stove. The amount to be disengaged may here be ascertained by noting the effects on the local trouble.

Of the vapors, those most useful are ethyl-iodide, creasote, turpentine, iodine, carbolic acid, iodine with creasote or carbolic acid, etc. These are most useful in the stage when the dryness of the mucous membrane is becoming moist and relaxed.

By insufflation—that is, by projecting fine powders by blowing on the affected parts. An insufflator is an easy method for applying the powder; it has a cavity reservoir, a tube straight or curved, and an air-bag for forcing the air through.

Of the powders, those most useful are iodoform, salycilate of bismuth, tannin, iodo-tannin, and especially resorcin. The last-mentioned will be found to have an excellent effect, by dusting over the whole area as far as practicable.

The internal remedies that will do most good are, first, atropine in solution—gr. j to ℥j of water—

each minim containing $\frac{1}{480}$ to $\frac{1}{400}$ grain, and the dose will be from one to five minims, the minimum being for little children (after first dentition). The tincture of belladonna may be used — from one to ten drops twice a day. As this medicament is both prompt and prolonged in action, it should be given not more than twice a day, unless the dose be much smaller than is advised above. Salicylate of cinchonidine and quinine should be given as a prophylactic remedy, if there be reasons to suppose that such power is really exerted by it. My own conviction is that as a prophylactic the combination of cinchonidine with salicylic acid is preferable to quinine. For the depression and melancholy it is probable that atropine will do better. For the distressing headache, joint pains, and wakefulness, antipyrin, acetanilid, phenacetin, and other germicides and antiseptics, will, no doubt, be found useful.

SECONDARY BONE IMPLANTATION BY A MODIFICATION OF SENN'S METHOD.

By JOHN B. DEAVER, M.D.,
DEMONSTRATOR OF ANATOMY AND LECTURER UPON SURGICAL ANATOMY, UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE GERMAN, ST. MARY'S, AND ST. AGNES'S HOSPITALS, PHILADELPHIA.

Annie H., aged seventeen, a native of the United States, was admitted into the wards of the German Hospital in September of the present year, with a diagnosis of necrosis of the lower third of the right femur. The history of the case is as follows: Family history negative; the patient was entirely well until two years ago. At that time she was occupied in household duties on a farm. One day, while scrubbing the floor in a kneeling position, she felt some pain which was referred to the right knee. The pain increased during the following day, when the joint became swollen and red. Three days later she was unable to stand or walk, when she was put to bed and confined there for the following thirteen months. Her treatment at that time consisted mainly in extension. The pains, which had been acute at first, became dull in character and shifted gradually from the front of the joint to the outer and lower aspects of the thigh. It was decidedly worse at night, the patient being frequently awakened from sleep by sharp, spasmodic, starting pains. Ten months ago she was permitted to get out of bed and move about on crutches. Soon after this an abscess formed on the outer side of the lower portion of the thigh, which was incised and evacuated by her physician, Dr. John Wentz, of Jeddo, leaving a sinus still present at the time of her admission to the hospital.

The affected knee had not regained its normal function. It was weak, "loose," and movements of flexion and extension were impaired, according to the patient's statement on admission. The above facts were found to be the case; also, coexisting lateral motion and soft crepitus were detected. On probing the sinus in the soft parts, the probe was readily brought in contact with exposed bone, which appeared solid. An examination of the other joints and of the secretions of the lungs and kidneys was negative. October 4, 1889, my colleague, Dr. J. William White, made a free incision, in the long axis of the thigh, opening up the sinuous tract, exposing the deeper structures. No necrosed bone could be felt under the periosteum, but upon chiselling out the compact substance somewhat deeply, a large cavity was discovered filled with débris and a sequestrum. After the cavity was thoroughly cleaned out it measured five inches in length and about one inch in breadth; the cavity trespassed on the spongy tissue of the external condyle. The wound was irrigated and the cavity packed with iodoform gauze wrung from a solution of bichloride of mercury, 1 : 2000.

The antiseptic bandage which enveloped the limb had to be reinforced several times, as there was considerable oozing from the wound. The limb was kept in an elevated position for several days. The second dressing was applied on the third day after the operation, and the third dressing on the tenth day. No pus was to be seen at either time. In spite of careful attention to the wound, a well-regulated diet, absolute rest, tonic and alterative medication, the process of regeneration was very slow. Dr. White's term of service having expired for the year, the case was placed under my care. Finding that the patient was not improving as rapidly as she should, I therefore decided to perform the implantation of decalcified bone chips (Senn's method). Dr. Senn, in an article in the *American Journal of the Medical Sciences*, September, 1889, states that a secondary implantation of decalcified bone chips can be as successfully performed as the primary operation, providing certain precautions (which I will state a little later on) are carried out. Having decided to operate, the granulations being in a healthy condition, I requested my resident, Dr. Gerlach, to irrigate the wound for several days previous to the operation with a solution of bichloride 1 : 1000. On the evening before the operation the patient was thoroughly bathed and an antiseptic dressing applied over the site of the operation. On Saturday, November 24th, the patient was brought before the clinic, the anæsthetic used being ether.

My assistant, Dr. Brinkman and my resident surgeon Dr. Gerlach, having rendered the patient and surroundings aseptic, I proceeded to the operation by first applying an elastic tube above the seat of operation, to prevent the blood from obscuring the wound. The operation consisted of four stages: First, thoroughly curetting the bone cavity to remove the granulations, so as to render it as clean as after a primary operation; second, separating the soft parts from the bone and dissecting off the cicatricial tissue around the cavity by free use of the scalpel; third, carefully dusting the entire cavity with sterilized iodoform, then placing therein a layer of decalcified bone chips, and repeating the iodoform, layer after layer, until the cavity was entirely filled, covering the last layer of bone chips with a layer of iodoform; fourth, the introduction of a deep set of sutures of aseptic catgut through the deep fascia, the perios-

teum having been removed by the primary operation, and completing the closure of the wound by bringing the skin and superficial fascia together with interrupted sutures of silver wire, observing the precaution to secure perfect coaptation. The final dressing was made by dusting the wound with sterilized iodoform, over which was placed a strip of aseptic protective (silk), and over this several layers of bichloride gauze wet in a solution of bichloride 1 : 2000, bichloride cotton held in position by an aseptic gauze bandage. The elastic tube was now taken off and the limb placed on a padded posterior splint, which was held in position by a muslin bandage which had been soaked in ninety-five per cent. alcohol for twenty-four hours. The entire limb was then placed in a fracture box and the patient returned to bed. The evening of the day of the operation the patient developed a violent conjunctivitis of the left eye, no doubt due to accidental contact with the ether. During the same evening she became decidedly delirious, with vivid visions, and fear alternating with ecstasy. With the mental disturbance she had an increase in bodily temperature which ranged between 99° and 101° F. The mental excitation lasted about forty-eight hours. The first dressing was removed on the tenth day after the operation, when it was found stained by the oozing following the removal of the elastic tube. The wound was perfectly aseptic. Some of the stitches, which were commencing to cut, were removed. The wound redressed with as great care as at the first dressing. The second dressing was removed seven days later when, with the exception of the ulcerating points in the skin caused by the remaining sutures, it was aseptic: these were removed at this dressing and the wound dressed antiseptically as above, the limb being still kept at rest by the use of the splint and fracture box.

Precautions and preparation of the bone-chips.—The precautions for the above operation are: first, that the granulations must be perfectly healthy; second, that the wound be thoroughly irrigated twice daily for several days previous to the operation with a solution of 1 : 2000 bichloride of mercury; third, that the iodoform should be sterilized; fourth, that the bone-chips should be aseptic; and last, but the most important of all, complete and thorough asepsis.

The bone-chips should be prepared as follows: The bone to be preferred is the tibia or femur of a freshly killed bullock, which can be easily procured at an abattoir. It should be immediately wrapped in a wet aseptic towel or several layers of wet aseptic gauze to prevent infection while being carried.

Arriving at the office the bone is to be sawed into segments two inches long, the articular extremities being discarded. Place the segments in a fifteen per cent. solution of hydrochloric acid in distilled water, after having removed the periosteum and marrow. This solution should be changed every twenty four hours, until the segments become decalcified, which requires from two to four weeks. When this process is completed the segments are to be washed in distilled water, then immersed in a dilute solution of caustic potash to remove the excess of acid. After the acid is neutralized, the segments are again immersed in distilled water for twenty-four hours, when they are then taken out and the cancellous structure in the medullary canal removed. The segments are now to be cut into strips in the direction of the long axis of the bone, of one-half to three-quarters of an inch in width. They are then ready for the last step in the process of their preparation, that of slicing them into chips of one millimetre in thickness. The chips are now to be placed in a glass-stoppered bottle containing a solution of bichloride of mercury in alcohol 1 : 500 and kept there until used. At time of operation the necessary amount of chips is to be placed in a five per cent. solution of carbolic acid.

Conclusions.—On reviewing the above case carefully, several points have been forcibly impressed on my mind: First, that the delirium following the operation was due entirely to the iodoform, as free iodine was found in sufficient quantity in the urine to warrant such a conclusion. But this action of iodoform need not give the surgeon any alarm, as it is only temporary. I wish here to state, that in my experience I have found iodoform, if properly sterilized, of very great advantage in the dressings of all surgical wounds, but especially in those made upon scrofulous tubercular and syphilitic subjects. Second, the liability to wound infection at the second dressing caused by the cutting of the sutures, which happened in this case, there being absolutely no pus present until the sutures were removed, when the tracks left by them became the seat of superficial ulceration. Third, that the cutting of the sutures is a complication which should not occur in primary operations, but in secondary operations it may occur, owing to the increased tension in approximating the soft parts caused by the removal of the cicatricial tissue surrounding the cavity. Fourth, that the symptoms of iodoformism, which were present in this case, were evidently due to the additional amount of the drug used in modifying Senn's method of alternating layers of iodoform and bone-chips, yet personally I think that this manner of packing the cavity is the preferable one, and in operating on subsequent cases I shall practise it until I have stronger evidence of its being detrimental to the welfare of the patient. Fifth, that unless the surgeon practising bone implantation after the above method is perfectly familiar and experienced in the technique of thorough aseptic surgery he need anticipate nothing but disappointment. Sixth, that drainage is not essential.[1]

[1] Patient at time of writing of this paper is up and around, ready to go home.

DIOXIDE OF HYDROGEN IN GENERAL SURGERY.

By THOMAS S. K. MORTON, M.D.,
PROFESSOR OF CLINICAL SURGERY IN THE PHILADELPHIA POLYCLINIC, ETC.

Having for some time past been making use of peroxide of hydrogen in all sorts of surgical conditions, and thinking that the agent is to find a definite and wide field therein, and, further, believing that the profession at large has not as yet been introduced sufficiently to its many applications and apparent benefits, I submit this clinical note.

What is known and sold as dioxide or peroxide of hydrogen consists of a more or less strong solution of peroxide of hydrogen gas in water. The strongest solution sold at present is termed the 20° or saturated solution. Practically we may call the substance water plus an atom of oxygen. Under almost any conditions the solution and the gas itself are unstable, but especially so in the presence of heat or organic matter; furious is its attack upon the lower vegetable forms of life and upon organic secretions or products such as pus, blood, serum, lymph, and saliva. The chemistry of its action depends upon the oxygen of the gas entering into new combination whilst its hydrogen is set free, causing great ebullition. It is this property of so readily parting with large quantities of oxygen (of course, in a nascent state) which renders it the substance of value in surgery.

Peroxide of hydrogen was introduced into medicine by Dr. B. W. Richardson, of London, who, so long ago as 1860, recommended and used the agent for almost all external and internal purposes to which it is now being, or about to be, applied. But, surprisingly, for some reason—possibly lack of pathological and bacteriological knowledge—its medicinal employment was soon totally discarded, and its valuable properties forgotten until a few years since, when the drug again came into use as a cleansing and sterilizing agent among laryngologists and otologists; whence, indeed, came the hints leading to its employment in general surgery.

Its field in the latter department of medicine is as a cleansing agent, wherever dead or living organic matter of low degree exists. The peroxide will not affect living tissues even to the stage of irritation, hence does not destroy most recently formed epithelial cells, while at the same time it burns up by oxidization all adjacent organic material of lower degree, such as microörganisms, their products, and their means of sustenance. This is more than can be said of other antiseptic agents, for, taking bichloride of mercury as an instance, a solution of it sufficiently strong to kill bacteria will also destroy newly organized cells. Then, again, our standard antiseptics do not remove the sterilized organic matter, nor penetrate into it so deeply as does the peroxide, which will eat through almost any depth of pus, lymph, etc., burning them as it goes, not, especially as in the case of sublimate, precipitating an almost impermeable layer of coagulated albumen which may screen septic matter beneath.

I am aware that certain bacteria act with vigor only in the presence of oxygen; but that form of oxygen to which they are subjected when hydrogen peroxide is used is *nascent*—a vastly more powerful element, the destructive energy of which in all probability they cannot resist, much less be enlivened by.

On the other hand, we can predict with much certainty that tubercular disease, which depends for its very existence upon a bacterium to which oxygen is most deadly, will afford a great field for the use of the peroxide. I have treated tubercular abscesses and sores by washing them out with the hydrogen solution and had them close up almost like simple incised wounds, and this, too, without use of the curette.

In ulcers of all kinds the effects have been surprising. The new epithelial cells cover over the denuded surface in a length of time occasionally almost incredibly brief. So, also, in burns have the effects been most satisfactory.

In practice, the surroundings of the sore, wound, or abscess are cleansed with turpentine, soap, and water, then the peroxide is poured on or injected until bubbling ceases, then protective in strips and an aseptic or antiseptic dressing is applied as usual. If bichloride is also to be used, the peroxide should be poured on first, as the latter will not act in presence of the former, whereby, also, the coagulum film usually produced by bichloride is likewise avoided.

In keeping drainage-tubes and deep cavities, as abdominal or pleural abscesses, drain tracks, or fistulæ, sweet and clean the solution is superior to anything that I have heretofore employed; principally for the reasons that while it is extremely effective yet it is absolutely innocuous and free from toxic effect. So safe, indeed, that even spoonfuls can be swallowed, and I am willing to leave it in the hands of nurses to use freely.

Why peroxide has not been used in the eye I cannot comprehend. One case of purulent ophthalmia which had resisted all efforts for several weeks in the hands of others, at once cleared up after but two instillations of the drug. Having, therefore, proved so useful in other purulent processes, I think it will likewise be found beneficial in gonorrhœa, gonorrhœal and other septic ophthalmiæ, and all tubercular processes where we can get the drug to the affected locality, as well as to many other of the innumerable septic conditions which are daily

presented to the surgeon or physician. In septic conditions of the mouth, thorax, abdomen, uterus, bladder, and vagina, it should be of especial worth from its non-poisonous yet powerful properties. In special regions. such as the conjunctiva, previous use of cocaine will prevent even the slightest pain. For cleansing surfaces where skin grafting is to be employed, or is going on, this drug is invaluable.

Further, peroxide appears to have a marked hemostatic effect: in contact with blood the latter is first turned to a brilliant scarlet hue of superoxygenation, and a second afterward is blackened by the cremative action of the nascent oxygen.

I have, as a test, used the oxidizing agent alone upon a few simple wounds, and they have progressed as well as would have been expected had other antiseptics been used.

It is not the belief of the writer that peroxide of hydrogen is to supplant bichloride of mercury, except in certain fields where the employment of the latter is undesirable or unsafe: more is its function to be as an adjuvant to the sublimate.

Recognizing that bacteriological investigation should precede clinical application of an antiseptic; but not being aware of such experimental facts, and not having time or facilities to elaborate them, I simply offer here the results of a limited clinical experience with the drug, hoping thereby to direct attention and investigation to the subject, and ultimately to call forth more exact knowledge of its properties, powers, advantages, and disadvantages.

SIMPLE METHODS OF PHOTOGRAPHING WITH THE MICROSCOPE.[1]

BY B. ALEX. RANDALL, A.M., M.D.,

PROFESSOR OF DISEASES OF THE EAR IN THE PHILADELPHIA POLYCLINIC; OPHTHALMIC AND AURAL SURGEON TO THE EPISCOPAL AND CHILDREN'S HOSPITALS.

THE praises of photography direct from the microscope have been already rung by men whose success in the employment of this means gives the best possible support to their claims of its value,[2] and the number of those who are using it is daily growing; yet there remain a large number of microscopists who fail to perceive its merits, or who regard the matter as lying outside of their field of work. They look rather scornfully at the best photographs of microbes or diatoms over which photographic experts grow enthusiastic, and incline to regard as a failure any photograph which falls short of giving the conventional picture of the diagrammatic drawings of the text-books. Even when unprejudiced examination has shown the exquisite fidelity and the diagrammatic clearness which may be obtained by photography, they still regard it as the province of the photographic enthusiast rather than of the practical microscopist. One reason for this is that they rarely see direct photographic illustrations used in actual publication, since it must at once be conceded that the reproductive methods now available are far from satisfactory; but probably the most potent obstruction to the widening of the use of photography is the prevalent impression that good results are obtainable only at great expense of time and money. Men glance, for instance, into Sternberg's treatise, only to lay it down with a sigh because all this apparatus is unobtainable; and, overlooking all that may be said about simple or improvised appliances, they resign all thought of entering the field.

Such considerations long withheld the writer from essaying the attractive task; but a single demonstration by Dr. Piersol of the possibilities of work by lamplight at once removed his misgivings and opened up the matter to him; and later work has fully confirmed him in the view that there is no reason why any microscopist should not obtain photographic pictures surpassing the highest skill of the draughtsman, not only in their unimpeachable accuracy, but even in their schematic sharpness. And as the demand increases for the direct reproduction of such pictures, there is every reason to believe that the mechanical arts will succeed in furnishing them with a perfection and a cheapness which no present method affords. It may safely be predicted that the time will come when photography will be employed to represent adequately all that the microscope can *show*, and that drawings will be needed only to demonstrate the points which *may be inferred but cannot be seen* in the preparation.

The two questions that most concern microscopists are: What apparatus is necessary in order to obtain good results? and, How may good photographs be gained with a practicable expenditure of time?

Let the beginner first decide what he specially wishes to photograph, and he will be wise not to choose the most difficult possible subject at the outset. Microbes that are almost beyond the highest resolving power of his instrument, do not offer the most favorable opportunities for success, however attractive they may be in this "cocco-phobic" age—objects that are resolved rather by the brain than the objective had better be deferred until some experience has been gained. Low-power work—too generally neglected—with good, clear sections, well-stained and thin, forms a more reasonable starting-point; and here apparatus of almost absurd simplicity will be all-sufficient. Some sort of camera is requisite; and, while it may be improvised, most men will do better to buy one of the many forms in

[1] Read before the Philadelphia Pathological Society, Nov. 14, 1889.

[2] Vide Piersol, Medical Photography, Trans. Phila. Path. Soc., xiii. p. 243.

the market, some of which are especially designed for this purpose. A "long draw" is a great convenience, since it permits of much choice in the amplification and size of the field, but it may be substituted by several cones of different lengths for uniting the camera to the microscope. These cones are easily made of pasteboard or any light-tight material, and constitute the only peculiar essential to photomicrography. Any camera and any microscope thus linked together may be successfully used, and no great skill is requisite in order that the usefulness may be limited to no narrow field. Good objectives are, of course, essential to first-class work, and any defects in transparency, definition, correction for color, or flatness of field, are apt to show in the results. But specially corrected lenses, like heliostats and other special appliances, are unessential, though valuable, and may be left to the expert who has unlimited time and money to devote to the matter, and aspires to the infallible conquest of every object which may be presented to him. The practical microscopist who takes up photography not as an end, but as a means, will usually find that his stand and lenses are equal to his needs in achieving good, and perhaps the very best, results within a fair range of subjects.

As an illumination sunlight is probably unapproachable, not only in its possibilities, but in the extreme simplicity of its employment. "But I have no daytime to give to the work," may seem a crushing answer to that; yet there are few microscopists who in the course of a week could not find one hour of leisure while the sun shone, and one hour of sunshine well used may give thirty or forty exposures, with the possibility of as many good negatives. The north light, which serves so admirably for most microscopical work, must be abandoned in favor of a window into which the sun shines; and, in the absence of a specially adapted table, an inch-plank, about six feet long by a foot wide, must be so adjusted that the sunlight shall fall upon the mirror of the microscope as it stands upon it, with the tube horizontal and connected with the camera. A vertical position is possible, of course, and may be compulsory in case the microscope-stand has no joint for horizontal inclination, and some fluid preparations may perhaps be thus better managed. In any event, it will be found convenient to secure the camera to the board or table top by small blocks and buttons, and it can then be used in any position, and when out of service may be stood up in a corner. For powers under 100 diameters, the reflection of the sun by the plane-mirror of the microscope, without any accessory apparatus, is all that is required—no condensor is requisite, and without it the heat-rays need not be cut off by a blue-cell. A mirror placed a couple of feet behind the ground glass of the camera (a standing toilet-glass answers admirably) is a great aid in adjusting the illumination, the field, and the approximate focus—then the fine adjustment is made with the aid of a magnifying glass. For this last purpose one of the microscope-oculars deprived of its eye-lens serves admirably, its tube being just the right length to allow of accurate focussing of the rough inner surface of the ground glass. For very high-power work a smoother surface than is furnished by the ordinary ground glass of the camera is said to be requisite, but for moderate-powers this answers perfectly. On either side of the true focus the image appears stronger and better defined than at the right point, because its outlines have an appreciable breadth instead of being mathematical lines—"where the image seems to melt into the ground glass" (Piersol) is the point of most perfect adjustment.

Unless the distance to which the image is projected is short, the arm will not reach the fine adjustment so as to allow of the necessary accurate focussing. Dr. Piersol's arrangement is, therefore, advisable—of a cord with weights carried across the head of the fine adjustment-screw (taking a turn around it, if it move stiffly), and passing through rings on the base-board, to be carried back along the edge, where it will always be within reach. A similar arrangement for the rack and pinion is rarely needed, since almost perfect focus can be made while standing by the microscope and looking in the mirror back of the ground glass. As this mirror allows in the same way of exact adjustment of the field to be photographed, no arrangement need be made to detach the microscope so as to search for this with the ocular. In photographing, an ocular may be used to increase the power, or an amplifier may be introduced into the tube; but the beginner will do better to work without either until he has learned to use his objectives by themselves, and has found them in need of such aids.

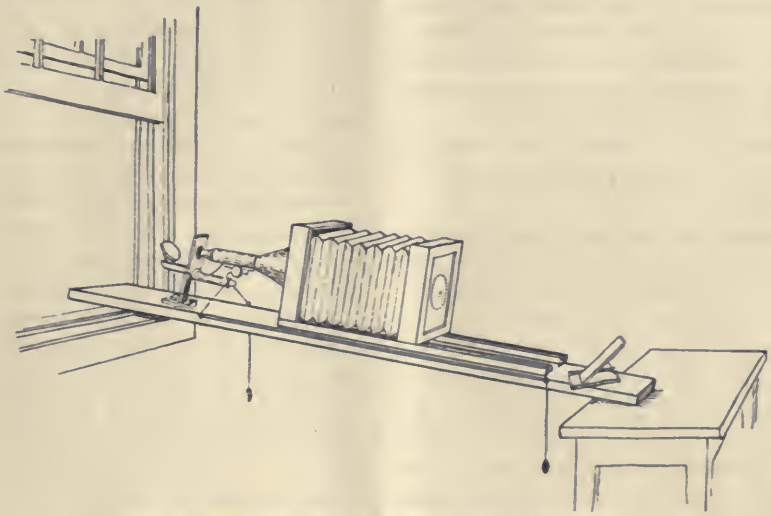
As to the exposure—use the slowest plate obtainable (such as Carbutt's A), as it gives the greatest latitude, and gives the shortest time that will afford a picture—vigorous development will then give a crisp negative with strong contrasts. If your negatives lack this quality, ask an expert photographer about them, or perhaps take him one or two to develop with you. The microscopist had better develop his own plates—any spare time can be utilized for it, and if night-time be chosen, any room with only a red light in it becomes a photographic dark-room. But he had better have a dark-room, if only a suffocating closet, since he can thus test at once the accuracy of his exposure, etc., and make another trial before changing his apparatus, if the first has not been satisfactory. A negative can be covered up light-tight in its developing-pan, while the operator runs in and out continuing his work, making new exposures, and trying new subjects; but mottl-

ing of the plate may result if it is left in the developer without occasional agitation. Such methods are unsystematic and indefensible from a photographic point of view; but the busy microscopist may find that he can by such unwarrantable measures sometimes treble the number of his successes without notably lessening the value of any one of them. Thus developing, one here and there, of a series which he wishes to make, the microscopist can photograph thirty or more preparations in a single hour of good sunlight; and as he puts away his apparatus at its close, he can count four or five finished negatives and some two dozen exposed plates that give promise of being as good as soon as he finds time to develop them. If this time is lacking, they may be turned over to a professional photographer, as may also the tedious process of making paper prints from the negatives.

How long to expose? will always be the cardinal question, and the learner will generally be disappointed at the vague answers he receives from the expert. Hold to one brand of plate (the same emulsion if possible) and one developer, as giving two constants in the problem, and note carefully the lens, the distance to which the object is projected, and the clearness of the atmosphere when the exposure is made; and study your results with an expert when you can. Over-exposure is most usual in working with sunlight, and the developer needs restraining. "Bromide of brains is the best restrainer." In making the exposure some opaque object may be held so as to cut off the light from the mirror while the slide is withdrawn, the exposure made by moving it aside and again interposing it, and then the plate-holder is closed once more. In the writer's work using a 1" Reichert lens with good sunlight and Carbutt A plates (sensitometer 10), and obtaining an amplification of 25 diameters, the correct exposure is about one-fourth of a second. The light is inversely as the square of the projection distance—so with similar conditions, except double length of draw and 50 diameters, the exposure should be one second. A quick hand can limit the exposure to one-fourth of a second or less—as short as has been found necessary—but a drop-shutter can be improvised to give a smaller fraction as may be desired. Summer sunshine is several times as rapid as that of winter; that of noon is far faster than when the sun is low; very little haze in the atmosphere lessens greatly the actinic power. These are facts in a problem that must be left to the judgment of the operator.

The field embraced in the picture is often an important matter, requiring considerable attention, and care must be taken that the plate shall receive all the essential portion of the image visible upon the ground glass. To this end, the point corresponding to the centre of the plate when exposed should be marked upon the ground glass, and a circle drawn around this to mark the minimum dimension of each size of plate to which the camera is adapted. Since the margins of the plates as bought are frequently faulty, the circle had better be only three inches for a 3¼ x 4¼ plate, etc.; though the full size of the plate can often be used without unwise economy. The draw-tube of the microscope is generally furnished with a diaphragm, which is of value in giving definition and flatness of field, but reduces materially the size of the field; the entire draw-tube can, therefore, be removed at times in order to bring the periphery of an object into view without any serious compromise of the sharpness.

The method of work thus laid down has one car-



An improvised apparatus for photographing with sunlight.

dinal difference from every other—it is working with the parallel rays of sunlight, and the effect is practically to photograph the disk of the sun with the preparation silhouetted against it. Every opacity which intervenes between the sun and the sensitive plate will make its mark upon the negative—dust on mirror, slide, or lens, scratches on the lens-front or bubbles in the balsam between the lenses, floating moats in the air, perhaps even sunspots, will show in the result. Stringent cleanliness is therefore requisite. To outweigh these disadvantages, the penetration thus obtained in a thick preparation, by the searching character of the light, will at times far surpass the performance of the same lens with an ocular; while, on the other hand, detail that is out of focus will often be drowned out by the flood of light—just as by the Abbé condenser when used to seek stained microbes in the tissues. A thick, poorly differentiated specimen may thus give a good photograph; yet well-stained, thin and even sections are none the less preferable. Although non-actinic colors have great theoretical advantages, admirable pictures can be obtained from hæmatoxylon preparations. Orthochromatic and other stained plates, as well as Dr. Piersol's method of actinic contrast, may prove a great addition to our refinements; but these are points which need not concern the beginner, who will do better to concentrate his attention on the simpler methods.

If the microscopist must confine himself to night-work, his task will be more difficult. Any lamp will serve as a source of light, and a little night-lamp, costing twenty-five cents, has been the writer's choice. It is to be placed, with its flame turned edgewise, in the line of the microscope-tube, and, except for very low-powers, some concentration will be required. For this purpose a bull's-eye or some form of substage condenser, or both, will be needed. One of the objectives can be adapted as a substage condenser, or the B ocular, which Dr. Piersol recommends, may be so employed, if the microscope lacks an Abbé or other regular apparatus; but with any form the problem of an evenly and strongly lighted field will demand careful, painstaking solution. The heat-rays emanating from even a tiny flame can by no means be neglected; or the operator may find his balsam melting, and a most singular streaky picture resulting from movement of the specimen while the exposure is going on. A mere piece of interposed plane-glass or isinglass will cut off much of the heat, or a blue-glass may be used below the stage, but at times the cell of ammonio-sulphate of copper may be needed. Rapid plates are in place for this work, since the time of exposure must always be considerable—averaging at least as many minutes as the sunlight required seconds. A convenient dark-room, however, will enable the operator to carry on several processes at once, and two dozen good negatives may often be made in an evening. With powers above 100 diameters the writer has done rather better work with lamplight than with sunlight; but this is because he has never prepared himself for high-power work. Concentration of the light is needed for such work, and can be used with safety to the objective and preparation only when the heat-rays have been eliminated—a matter easier with lamplight than with sunlight.

A few words in recapitulation. By securing a camera, with a cone to connect it with his microscope, a piece of plank, a developing solution, some hyposulphite of soda, a ruby light, a few pans, and some dry-plates, the microscopist has the needed outfit for beginning his photographing. The outlay will be from $20 up, but may be greatly lessened if the camera is made, borrowed, or bought second-hand. Fastened to its base-board, the camera may stand out of the way in a corner until wanted; then in five minutes all can be gotten into readiness for work. The apparatus is to be so placed that the sunlight falls upon the plane substage mirror (projected out of the window if necessary), and the light reflected into the instrument. The standing-mirror is placed at the far end of the apparatus, so that the operator as he stands by his microscope can see the ground glass reflected in it; then it is easy to adjust the illumination, find and centre the field, and get an approximate focus. Accurate focussing is then done with the aid of a magnifying glass, and the plate-holder charged with its sensitive plate is substituted for the ground glass. An opaque object is held so as to cut off the sunlight while the slide is drawn, is removed and replaced, so as to make the brief exposure desired, and then closing his plate-holder, the operator detaches it, and seeking his dark-room proceeds to develop his negative, and reloads. A miss may call for another shot—a hit will open the way to a long series of results more or less successful. Taking careful note (written as well as mental) of each exposure, the microscopist will quickly become master of one situation at least; and, while he must expect varied fortune when he changes the conditions and enters unknown territory, he will find much of it open to ready conquest, and having once entered the field, he will not quickly be willing to quit it. Let him begin with sunlight and a good low-power objective, and he will quickly achieve brilliant results, which the expert can hardly excel; and even though he makes no attempt to enter other fields, he will find that he has made a most valuable addition to his powers as a microscopist.

THERAPEUTICAL NOTES.

The Treatment of Acute Catarrh of the Rectum.—Quite frequently the practitioner of medicine sees cases in which the entire list of remedies generally found of value in the treatment of diarrhœa have proved useless, or merely palliative in effect. While they may control the frequent movements of the bowels for a time, the trouble reasserts itself, as soon as the medicine is withdrawn, at the best in a somewhat modified form. Careful inquiry will show, in such cases, several points of value as to diagnosis and treatment. The attack has probably been preceded by a few days during which there has been a sensation of weight or fulness in the rectum and about the anus; following this, a sensation of bearing down asserts itself, accompanied by violent pain referred to the region of the stomach, or small gut. So severe is the pain in its paroxysms that the patient may cry out with it, and the perspiration break out over the body. At first small passages may occur, but after a few stools they consist of wind and a few drops of mucus, which is expelled after a period of agonizing pain and tenesmus. Opium makes the state ultimately far worse than before, and nearly all astringents are valueless. Under these circumstances, small doses of chlorate of potash injected into the rectum are most serviceable, only one or two injections being necessary in some acute cases to produce a cure. A saturated solution of the potash in water should be employed, and about half a tumblerful injected each time, very slowly and without force, and retained for ten or fifteen minutes. Large injections will cause pain and expulsion of the liquid, and no result will be attained.

MEDICAL PROGRESS.

Treatment of Hairy Moles.—Dr. Arthur Jamison has found ethylate of sodium the most satisfactory remedy for the removal of hairy moles. The hair is cut short and the ethylate is rubbed in with a glass rod till the surface assumes an orange or black hue. The crust so formed is allowed to separate spontaneously, for which a period of three weeks is sometimes needed. Most of the hairs will then be found destroyed, and a white smooth scar left. Any hairs which remain can be dealt with by the same method *seriatim*. In using the ethylate care must be taken that it does not run down on the sound skin, and the part treated must not be touched with water till the crust comes off.—*Edinburgh Medical Journal*, December, 1889.

The Treatment of Placenta Prævia.—Dr. J. Braxton Hicks thus summarizes his opinions upon the treatment of placenta prævia:

1. After a diagnosis of placenta prævia is made, proceed as early as possible to terminate pregnancy.

2. If the os be fully expanded and placenta marginal, rupture the membranes and wait to see if the head is soon pushed by the pains into the os.

3. If there be any slowness in this respect, employ forceps or version.

4. If the os be small and placenta more or less over it, the placenta is to be carefully detached from around the os; if no further bleeding occur, wait an hour or two. Should the os not expand, and if dilating bags are at hand, the os may be dilated. If the forceps can be easily applied, they may be used; but if not, version by the combined external and internal method should be employed, and the os plugged by the leg or breach of the fœtus; after this is done the case may be left to nature, with gentle assistance, as in footling and breech cases.

5. If the os be small, and neither forceps nor dilating bags are at hand, combined version should be resorted to, leaving the rest to nature, gently assisted.

6. If during any of the above manœuvres much bleeding should occur, it is best to turn by combined method in order to plug by the breech.

7. Where the fœtus is dead, or labor occurs before the end of the seventh month, combined external and internal version is the best method.

8. If, however, a routine method is employed in all cases, it will be found that version by the combined method—no force following—gives a result as good, if not better, than any.

After-treatment.—The after-treatment must be conducted on the modern principles: should oozing occur after the expulsion of the placenta, the swabbing of the lower uterus by styptics will be easy; and inasmuch as the outlet of the uterus is liable more especially to be blocked by adherent clots, it will be wise to irrigate the uterus daily with some antiseptic solution, or insert iodoform pessaries in the vagina, particularly if the irrigation cannot be done.—*British Medical Journal*, November 30, 1889.

Somnal: the New Hypnotic.—In the *Zeitschrift des Apotheker-Vereines* of November 10, 1889, is a notice of a new hypnotic, introduced by Herr Radlauer, of Berlin, to which he has given the name of somnal. This body is formed by the union of chloral, alcohol, and urethan; it is a true chemical combination, and differs from the already known compound chloralurethan. It occurs in clear, colorless crystals, which have a slightly bitter taste, and are very soluble in water and alcohol. It is given in two-gramme doses, and in half an hour after its administration a sound natural sleep is produced, which lasts from six to eight hours, and the patient experiences no unpleasant effects upon awakening. It does not derange the digestion, and has no influence upon the pulse or temperature. In fact, it combines the excellent qualities of chloral and urethan without any of their unpleasant effects. It is already in use in the hospitals of Berlin and Moscow, and appears to have given satisfaction.—*British Medical Journal*, November 30, 1889.

Early Surgical Treatment of Perityphlitis.—In a paper read by Drs. E. W. Lee and J. B. Murphy before the Chicago Medical Society, November 4, 1889, the latter said that as it is impossible to make experiments on the vermiform appendix in the lower animals, it being present only in the ourang-outang and a species of bat, our knowledge of its physiology and pathology must depend on observations made upon it in man. Its absence in such a large number of omnivorous animals would lead to the belief that it has no influence on digestion. Notwithstanding our inability to attribute to it any special function, we still see the evil effects produced by its diseases. From its form, its valve, its position, and the different mechanical influences to which it is subjected,

there may occur a retention of feces or foreign body within its lumen. These feces become solidified and by their presence induce hyper-secretion of mucus, which deposits its phosphatic and other salts as a concretion around the retained nucleus in the appendix.

The authors then endeavored to demonstrate that *perityphlitis vermicularis* belongs always to the province of surgery, and that its dangers are avoidable and its recurrence preventable only by surgical interference. Such a statement may appear radical, but they sustained it by two facts which may be considered as positively proven: (1) That perityphlitis is *always* accompanied by the development of a pus-cavity. (2) That with medical treatment the patient is liable to a recurrence of the disease. Within the past three years they had made autopsies on three cases which showed that fatal peritonitis was caused by the rupture of the perityphlitic abscess into the peritoneal cavity, where its existence had not been previously diagnosticated.

The dangers are:

1. Perforation of the appendix, permitting escape of its contents into the peritoneal cavity directly or indirectly by a rupture of the circumscribed suppuration.

2. Where the abscess is extra-peritoneal, by the formation of a septic phlegmonous cellulitis and death from sepsis.

3. By the emptying of the contents of the abscess into some of the neighboring organs or cavities, as the bladder, kidney, or thoracic cavity.

Perityphlitis treated on the expectant plan is a frequently recurring disease. Paulier states that the first recurrence came from the twentieth day to the twentieth month (Thèse de Paris, 1875). From the 106 cases which were collected by Krafft, of Lausanne, 24 had previously experienced attacks. In one case the attack occurred twenty years previously, in another seven, and in another three. One case had a previous attack in 1863, lasting thirty-two days; in 1864, a recurrence, lasting twenty-eight days; in 1865 another, lasting nineteen days; in 1866 still another, making in all four seizures in three years. The frequency of recurrent attacks of perityphlitis the authors could sustain, as their observation coincides with Krafft's. Krafft, in 106 cases in which the diagnosis was verified either through autopsy or direct incision into the abscess cavity, found that in all of them greater or smaller accumulations of pus were present at the seat of the appendix or cæcum. Out of the 106 cases there were 84 autopsies, in all of which abscesses were found in the ileo-cæcal region. Eight times he operated in the absence of fluctuation, redness, or swelling of the abdominal wall, and eight times he found pus. In the remaining 14 cases, the abscess emptied into the cæcum or other organs. Drs. Lee and Murphy found pus in each of their 13 cases. Bull had collected 67 cases of perityphlitic abscess, 38 of which opened externally through the abdominal wall, 8 into the peritoneal cavity, 2 into the thoracic cavity, 2 into the bladder, 2 into the internal iliac vein, 1 produced chronic peritonitis, 1 pyæmia, and in 1 the result was not ascertained. Of Paulier's 49 cases, 4 opened into the peritoneal cavity, 6 into the retro-cæcal cellular tissue. Of Krafft's 106 cases, 17 opened into the cæcum, and 1 into the bladder. His cases operated on by direct incision into the abscess cavity all recovered.

That the cause of perityphlitic abscess is perforation of the appendix is sustained by the fact that among 645 recorded autopsies there were 324 perforations. It is recorded in cases of perityphlitis that the cæcum is frequently peforated from within outward, but Krafft is convinced that if a careful examination of the opening be made it will be seen that the *perforation occurs from without inward, and not from within outward*, showing that the opening in the cæcum was not caused by an ulceration of the mucous membrane, but by an ulceration of the abscess wall into the cæcum. In Weir's 100 cases there were only 4 perforations of the cæcum; 2 of these were openings from without inward. The vermiform appendix is not only perforated, but part of it entirely destroyed, as is shown in two of the cases reported by the authors. Perforation usually occurs at the free end, but when it occurs in the middle the ulceration is circular and the appendix can be amputated as shown in one of their cases.

The cause of the perforation is found to be most commonly fecal stones. Of Matterstock's 146 cases, in 63 he found fecal stones, and in 9 foreign bodies. Of the 49 autopsies on children, 27 fecal stones were found, and 3 foreign bodies. Of the 106 cases of Krafft, 86 were fecal stones, and 9 of other foreign bodies Of the 13 cases reported by the authors, fecal stones were found in 5; a fragment of bone was found in one case. The fecal stone is a small bean-shaped body, rounded at both ends, usually smooth on the surface, and varies in size from that of a small pea to that of a peanut. Some of them are hard, others soft and friable. The centre is usually of a yellowish-gray color.

Toft states that in one-third of the autopsies made between the ages of twenty and seventy there were pathological changes in the vermiform appendix. In 5 per cent. of these cases there had been ulceration of the appendix.

Dr. Ludvig Hektoen, of Chicago (pathologist to Cook County Hospital), in 215 consecutive autopsies on adult cases at the Cook County Hospital, found adhesions of the appendix. He did not note the number in which there had been previous ulceration. In 9 of the cases the appendix was adherent to the parietal peritoneum, which elucidates the frequency with which the abscess is extra-peritoneal.

The question When shall we operate? is an important one. Deahna operated on 7 cases in which there was neither fluctuation nor phlegmon in the abdominal wall, and in only one case did he fail to find pus. He operated from the ninth to the twenty-first day from the onset of the attack. In one case he failed to reach the abscess, but the pus emptied itself through the wound on the second day afterward. Usually at the end of the fourth day symptoms of general peritonitis subside, and there can be felt a slight induration in the right iliac region; then is the time to operate. Willard Parker has suggested performing the operation from the fifth to the twenty-first day, but only in the presence of phlegmon and induration. Eichhorst also says that operation should not be performed where fluctuation is not present. Drs. Lee and Murphy do not consider those cases in which fluctuation is present, for they have always been successfully operated upon. They desire to call the attention of the profession to cases where there is only a small induration in the ileo-cæcal region, with the accompanying symptoms of perityphlitis before

there is the slightest evidence of fluctuation or phlegmon in the abdominal wall. As yet, the number of cases operated upon have been too small to lay down any definite rule as to the time for operating, notwithstanding it is their conviction that before many years every case of perityphlitis when diagnosticated will be immediately opened, the appendix ligated, if possible, and amputated. The one sign in their cases invariably was a small induration in the right ileo-cæcal region, and in this induration the authors invariably found pus. The surgeon must not depend upon the number of days from the beginning of the attack, as a guide to operative interference. The cases differ so widely that often after forty-eight hours from the onset of the attack it is too late; in other cases weeks or months may elapse before an operation is demanded. Of the 76 fatal cases collected by Fitz, 56 died from perforation in the first week, 31 in the second, 4 in the third and fourth. His statistics show how early a fatal termination can take place and how *imperative* an early operation is. In general, it could be said that as soon as the diagnosis was made, too early an operation was impossible.

"Of the mortality in the number of cases operated on early, we have: Bull, 17 cases, with 15 recoveries; Krafft, 8 cases, 8 recoveries; Deahna, 8 cases, 8 recoveries; their own 8 cases, 6 recoveries. Weir's 26 cases operated upon cannot be included in the early cases, as he says that the operation was frequently postponed for a long time, not as a matter of choice, however, but because he saw the patients only in consultation, or because they would not submit to an operation. Noyes found in examining the statistics of 100 cases operated on, that of those operated on after the eighth day, 17 per cent. died. Of those operated upon before the eighth day, 8½ per cent. died, there being 50 per cent. more recoveries in the cases operated upon early—that is, before the eighth day."

Some Incompatibilities of Antipyrin.—If fluid extract of cinchona be added to a solution of antipyrin in distilled water, a dense reddish-brown precipitate is formed, which contains tannic acid and antipyrin. The greater part of this precipitate dissolves on the addition of dilute sulphuric acid, the insoluble portion being probably the coloring matter of the bark, for if a solution of tannic acid be used instead of the fluid extract of cinchona as a precipitating agent, a pure precipitate forms, which entirely and easily dissolves on the addition of the dilute sulphuric acid. It follows, therefore, that decoctions, infusions, and tinctures containing tannic acid should act in the same manner. The effect, however, produced by these preparations is very small compared with the fluid extract of cinchona. Antipyrin is not precipitated by solutions of the alkaloids, quinine, cinchonine, or cinchonidine. Therefore, it can be prescribed in a mixture containing sulphate of quinine and dilute sulphuric acid. When strong solutions of chloral hydrate and antipyrin are mixed a white precipitate is formed, which soon becomes resolved into globules of oily-looking liquid, which sink to the bottom in a distinct layer. This layer, in the course of some hours, changes into a crystalline mass, from which the clear upper liquid can be drained off. These crystals are soluble in water, but considerably less so than either antipyrin or chloral hydrate. They have a distinct taste of chloral without its pungency, and they are not so bitter as antipyrin. This precipitation does not occur in dilute solutions, and it is possible to mix a solution containing sixty grains of antipyrin to the fluidounce with one containing the same proportion of chloral hydrate without any precipitate being immediately formed, although in a few hours small crystals begin to appear. A solution containing fifteen grains each of antipyrin and chloral hydrate to the fluidounce appears to be a permanent one, for at the end of a week there is no appearance of crystalline matter. Clinical experience alone can determine whether mixtures of these two bodies possess any therapeutic properties different from those of the constituents. In prescribing them together, it is to be borne in mind that the solutions must be dilute.—*British Medical Journal*, November 16, 1889.

Treatment of Albuminuria and Eclampsia of Pregnancy.—Dr. E. P. Hurd writes upon the treatment of albuminuria in pregnancy, and its complications, thus: The treatment of puerperal eclampsia includes the prophylactic treatment and the treatment of the convulsive seizures. Many pregnant women have albuminuria and nephritis, and go to their full term without convulsions In other cases there are early warnings that there is danger ahead. Among the symptoms of renal insufficiency are headache, drowsiness, tinnitus aurium, perhaps more or less dimness of vision, or blindness of one or both eyes, dizziness, dyspnœa, especially on exertion, nausea, and vomiting; the urine is scanty and loaded with albumin, while the percentage of urea is not more than one-half or one-fourth the normal.

Here the duty is plain. The patient must refrain from work, be put on a diet of milk, with or without Vichy water, and fruits, with a minimum of animal food. Saline diuretics, as cream of tartar or acetate of potassium, may be prescribed, and tincture of chloride of iron in full doses three times a day. Also a full dose of Glauber salts in the morning to promote free elimination by the bowels. It may be expedient to give at bedtime a full dose of fluid extract of jaborandi to produce profuse sweating, or to administer hypodermatically one-eighth of a grain of pilocarpine, or even resort to the wet-pack or hot-bath. If, in spite of these efforts to relieve the engorged kidneys and protect the irritated nerve-centres, the patient becomes worse, and convulsions seem imminent, premature labor should be induced.

When called to treat a woman already in convulsions, if labor has not already commenced, it must be expedited by artificial means under chloroform. If labor is advanced, and the os is dilated or dilatable, the patient must be immediately delivered by the forceps or by version. A ten-grain calomel powder may be placed on the patient's tongue, and, if the vascular tension seems high, sixteen ounces of blood may be taken from the arm. It will seldom be desirable to repeat this venesection. Chloroform should be administered to complete anæsthesia, and the patient should be kept under its influence as long as convulsions threaten. As adjuvant to the chloroform, a full dose of chloral may be given by mouth or by rectum. Possibly, in obstinate cases, a hypodermatic of morphine may be advisable.—*Therapeutic Gazette*, November 15, 1889.

Laveran's Organisms in the Diagnosis of Malaria.—Professor Osler thus summarizes his later conclusions

upon the organisms found in the blood of persons suffering from malaria:

First. In the acute forms of malaria there exist, within certain of the red corpuscles, amœboid bodies, usually pigmented, which undergo a definite evolution, increasing in size, gradually filling the entire corpuscles, and which prior to and during the chill, undergo a remarkable segmentation. There are also, in some cases, free pigmented bodies. To the form within the corpuscles, which undergoes changes, the term *plasmodium* has been applied. Occasionally, in acute forms, flagellate bodies are seen free in the blood, presenting from three to eight long, actively moving cilia. According to Councilman, these are much more common in blood withdrawn from the spleen.

Second. In more chronic cases, particularly in the forms of remittent fever, which are so apt to be taken for typhoid, the corpuscles do not so often present the intercellular forms, but there are remarkable ovoid, rounded, and crescented bodies deeply pigmented. These are, in all probability, related to and developed from intercellular forms. From certain of these, particularly the ovoid and rounded forms, the flagellate bodies may be seen to develop. Unfortunately for the general practitioner, the determination of the inter-cellular forms requires a tolerably high power with good illumination. A one-twelfth immersion lens is preferable, but with care a good eighth is sufficient, and in the chronic cases, with the crescents in the blood, a sixth suffices. It is important to have the finger-tip, from which the blood is drawn, thoroughly cleansed, and it is best to take a very small drop of blood, so as to have the layer uniformly thinly spread out with the corpuscles isolated, not in rouleaux. —*Johns Hopkins Hospital Bulletin*, December, 1889.

Influenza.—A writer in the *Internationale klinische Rundschau*, December 8, 1889, who has studied the recent epidemic of influenza at St. Petersburg, classifies the varieties of the disease as follows:

1. The nervous form, in which neuralgic pain, often simulating pleurisy, etc., is a prominent symptom. The mucous membrane of the gastro-intestinal and respiratory tracts are normal. This form is very common, and in the beginning is frequently mistaken for typhoid fever.

2. The form characterized by catarrh of the respiratory tract. Bronchitis, coryza and conjunctivitis develop with fever, and frequently continue for some days after the fever has disappeared.

3. The gastric form, in which there is a catarrh of the gastro-intestinal tract, often with severe vomiting, which lasts about two days.

Other symptoms occasionally present are herpes of the lips, nose or eyelids, erythema, roseola, and urticaria. More serious complications, fortunately very rare, are meningeal irritation and pneumonia. The latter is the cause of death in the few fatal cases.

Besides these well-marked varieties there are many others which run a slight course or are abortive.

Convalescence is usually rapid, many patients feeling quite well within one day after the temperature has fallen to normal. With others the catarrhal or nervous symptoms continue a few days longer. Relapses have been observed occurring between the fifth and seventh day of convalescence, ushered in, as is the primary attack, with a chill followed by fever.

In treatment the most useful drugs are quinine, antifebrin, antipyrin, salicylate of sodium, and diaphoretics.

Œsophagotomy with Pleurotomy.—DR. FISCHER, of Hanover, in the *Medicinische-chirurgische Rundschau*, December 1, 1889, reports an interesting case in which a small piece of bone lodged in the œsophagus and finally ulcerated its way into the pleural cavity. Two weeks after the bone had been swallowed, the patient, a man of fifty years, began to suffer from difficult deglutition, offensive expectoration, and a diffuse painful swelling on the left side and somewhat below the thyroid cartilage. Fischer opened the œsophagus and nourished the patient through the fistula. Fetid expectoration, however, continued, the left vocal cord became paralyzed, and fever appeared with dulness and crepitant râles over the entire left chest. Puncture in the ninth intercostal space was followed by a discharge of thick, offensive pus. Free drainage of the pleural cavity was secured by resection of a rib, but death followed from collapse. The foreign body was not found.

Prescription for the Expulsion of Tapeworms.—The following is recommended by the *Deutsche med. Wochenschrift* as an efficient tæniacide:

℞.—Croton oil . . . . 1 drop.
Chloroform . . . . 1 drachm.
Glycerin . . . . 1¼ ounces.—M.

One-half of this should be taken in the morning on an empty stomach; half an hour later, the remainder. The patient's diet should have been light on the previous day.

Antiseptic Treatment of Puerperal Eclampsia.—*L'Abeille Médicale* of December 2, 1889, details the following treatment for this affection:

Preventive treatment:

1. A milk diet and the prevention of the formation of poisons in the intestinal canal by the use of the following prescription, one powder of which is to be given every six hours:

℞.—Naphthalin, Sugar, Salicylate of bismuth . . . āā 30 grains.—M.
To be made into eight powders.

2. Administer on the third or fourth day a wineglass of some purgative water, or two teaspoonfuls of sulphate of soda or magnesia in a little water.

3. Favor the action of the skin and kidneys by warm baths twice a week.

Curative treatment:

1. Quiet and absolute rest.

2. Bleeding, from one to many ounces.

3. Give by the stomach a dessertspoonful of the following mixture:

℞.—Chloral . . . . . 6 drachms.
Bromide of soda . . . 6 "
Distilled water . . . 4 ounces.—M.

If the convulsions continue, push the chloral and use chloroform inhalations to the point of anæsthesia.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

Address the Editor: H. A. HARE, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, including Postage.

PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, DECEMBER 28, 1889.

THE RESUSCITATION OF PERSONS WHO HAVE STOPPED BREATHING.

WITH the advent of the production of artificial anæsthesia by the use of certain chemical compounds the importance of this subject necessarily became enormously increased, and no one can doubt but that the majority of cases of arrested respiration depend for their exciting cause upon some such agency. It is of the greatest importance that a clear idea of the necessities of the case be before the physician under such circumstances, and that his action be one of rapidity and clearness so far as the ultimate result is concerned. By some curious fallacy of teaching the greater part of the profession have been taught to faradize the diaphragm into contraction with the rapidly interrupted current by the application of one pole over the phrenic nerve in the neck and the other over the abdomen. It requires but little thought to show that such a method is ludicrous in the extreme, for by using such a current on any muscle we produce a condition of spasmodic contraction or tetanus. Every one knows that the diaphragm relaxed by paralysis or contracted by spasm, so long as it is immovable, is equally harmful to the patient. If any current is to be employed, let it be that which is slowly interrupted and which will alternately contract and relax this important respiratory muscle. There can be little doubt but that the rapidly interrupted current has caused persons to renew their respiratory movements, but in these cases the result has been dependent almost certainly upon the reflex excitability of the cells in the spinal cord and medulla rather than on action upon the phrenic nerve. If such an action is required, let the poles be swept over the body so as to cause peripheral irritation.

The absurdity of the application of the rapidly interrupted current to the phrenic is not alone dependent upon the points we have named. It has been proved by careful observation (*University Medical Magazine*, November, 1889) that the application of the electrode over the phrenic nerve in the neck will cause cardiac arrest through diffusion of the current to the vagus nerve, and Griswold reached conclusions of an identical character in the year 1885.

If electricity is used, it should be employed solely as a peripheral irritant, with the object of arousing the patient, as would a dash of cold water.

The question at once arises as to what is the best thing to do under such circumstances. If the arrest has occurred when the patient is under chloroform, his head should be lowered and the feet raised, almost perpendicularly. The neck should not be extended but held in the normal position so that the chin is somewhat shot forward and at a right angle to the body line. If the neck be extended the glottis does not open as well as when the position named is assumed. While one assistant supports the head another should use artificial respiration by Sylvester's method, and it will then be readily seen that there is an increased volume of air passing in and out of the chest. The drawing forward of the tongue is not so important as is imagined, unless it is turned with its tip toward the glottis. The use of ammonia as a rapidly acting respiratory and cardiac stimulant, when given intravenously into the leg, may be resorted to, and dashes of cold and hot water should be employed, not only for their excitation of the peripheral nerves, but also for the purpose of keeping the bodily temperature from rising above or falling below the normal line, the latter danger being the most pressing, of course. The hypodermatic injection of ether is a ridiculous therapeutic attempt, for if the system and respiratory centres are so depressed by the ether taken into the blood through the lungs as to have their functions in abeyance, why should we add still greater depression by injecting more of the

same drug. Let everything that is done be born of sense and thoughtfulness of the exact action and result desired, and let nothing be done simply because some other person has done it, great though he may be in the practice of the healing art. Measures for the relief of persons suffering from any malady depend not upon empirical laws, but upon the good common-sense of the physician in charge, even if the measure is a most revolutionary one in character. The sooner this is realized the sooner will better results be attained in the practice of physic, and the more thoroughly will disease and all its concomitant states be combated.

CORRESPONDENCE.

NEW YORK.

To the Editor of THE MEDICAL NEWS,

SIR: At the last meeting of the New York County Medical Association, Dr. von Donhoff, the surgeon who came to this city a few months ago from Louisville, Ky., threw a bombshell, as it were, into the camp of our New York surgeons, who have of late become so enthusiastic over the McBurney operation for the radical cure of hernia, by the declaration that the latter was neither a safe nor a perfect operation. The occasion of this sensation was the exhibition by Dr. T. H. Manley of a patient seventy-three years of age upon whom he had recently performed the McBurney operation on both sides, with the result, thus far at least, of complete success; and in his remarks upon the case Dr. Manley spoke particularly of the applicability of this procedure to all kinds of patients, whether old or young, provided no organic disease was present.

In defence of his assertion Dr. von Donhoff stated that since he had come to New York he had had the opportunity of seeing a considerable number of these operations, particularly at the Roosevelt Hospital, and that he had examined the results with special care. These results he considered anything but satisfactory, and as to the applicability of the operation to all subjects, he said that he had noticed some of the worst results in young persons of more or less robust habit. The most unfortunate case of all that he had observed was one in which the McBurney operation was performed by Dr. S. T. Armstrong, a most careful and accomplished surgeon. The success of the operation when he first saw the patient, perhaps ten or twelve weeks ago, was apparently very brilliant. But, notwithstanding the fact that the man was able to perform all sorts of contortions without inconvenience or disturbance of the parts, Dr. von Donhoff made the remark that the essential character of the operation was based on facts which would annihilate it as a scientific procedure. And in this instance, at least, his prognostication had been verified; for at the present time the condition of the patient was such that he was totally unable to wear a truss, while any operation that could be undertaken for the closure of the opening would necessarily have to be of so extensive a character that it seemed hardly likely that the man would submit to the incident risk.

Dr. von Donhoff further said that some years ago he had reported thirty-four cases of hernia operated on by a method of his own, in all of which the conditions recurred. The want of success, he was confident, was due to the fact that the same principle was involved as in the McBurney operation; for it was an indisputable dogma that it is impracticable and impossible to secure a union of structures which are not histologically analogous, and the failure of such attempts will be immediate or not according to the special conditions met with in different cases.

Of course, Dr. von Donhoff's strictures drew a spirited rejoinder from Dr. Manley, who had done the McBurney operation fifteen times, thus far with complete success: and it was learned with satisfaction that Dr. von Donhoff proposes at no distant date to read a paper himself on the radical cure of hernia before the Association. This will certainly prove an occasion of unusual interest, and there can be no question that Dr. McBurney and his followers will be on hand and in full force to defend their position with facts as well as arguments.

At the same meeting Dr. Manley also presented a young man who had been thrown down and run over in the street by a wagon, both wheels of which passed over his neck. In consequence of the injury, violent inflammation of the larynx and the adjacent structures resulted, which was followed by increasing difficulty of respiration. Various topical applications having failed to relieve the dyspnœa, Dr. Manley, fearing that at any moment fatal spasm might occur, (as he had seen in another similar case), at first attempted intubation by O'Dwyer's method, but, unfortunately, the only set of tubes at the hospital was for a child, and it was found impossible to secure retention of even the largest of them. In the meanwhile the patient's sufferings and struggles were constantly increasing, and tracheotomy was performed without further delay, with the result of saving the man's life. Under such circumstances, when the patient is strangling to death, Dr. Manley said he knew of no more trying operation in surgery. Under the administration of ether the respiration grew weaker and weaker, and it was necessary to operate very rapidly. Before the tracheotomy tube could be inserted the patient ceased to breathe altogether; but by blowing into the tube and resorting to artificial respiration death was averted. In commenting on the case, Dr. Manley said that he believed that trachotomy might probably have been avoided if an O'Dwyer tube of the size for adults had been obtainable, and expressed the opinion that every hospital ought to be supplied with full sets of these instruments for such cases of emergency.

In the course of his anniversary address before the New York Academy of Medicine, on "The Relation of Medicine to some of the Questions of the Day," Dr. William M. Polk took up the subject of socialism, which, he said, was rapidly becoming a question of classes in this country. The same human inspiration was at the bottom of the present social agitation, he believed, as underlay the French Revolution, and we have got to see what the outcome would be under the changed conditions. The content of a people is largely dependent

on its physical well-being, and in this country one social order—that which was most widely separated from the class from which social agitation sprang—had the means to compel healthful conditions. Therefore, he held that it was the duty of physicians to speak out plainly to the class which held the surplus wealth in regard to the physical conditions surrounding the working classes. Physical well-being was the result of obedience to natural laws; the demand for knowledge of those laws was constantly growing, and the medical man's duty to society was to satisfy it. "Let us present the facts," he said, "to the class which commands the surplus capital. Let us show them that the viciousness and laziness from which socialism draws its strength are the result of bad physical conditions which those surrounded by them are unable to change. We shall then have taught the means of self-preservation; we shall have taught man his duty toward God, and toward that temple of God which was created when he entered the world."

Mayor Grant recently re-appointed the widow of the late Dr. Cornelius R. Agnew, the distinguished ophthalmologist, a member of the Board of Education; and in the place of Miss Dodge, daughter of the late William E. Dodge, whose term had also expired, appointed Mrs. Clara M. Williams, who has the advantage of having herself gone through all the grades of the public schools and having been graduated from the Normal College. Considerable opposition was manifested to the re-appointment of the lady commissioners, and, in consequence, two large petitions were forwarded to the Mayor, urging him to take this action. One was signed by Bishop Potter, the Rev. Dr. Morgan Dix, ex-President Cleveland, Vice-President L. P. Morton, Rufus Choate, and other prominent citizens, and the other by a long list of physicians, who were convinced that such action would be for the best hygienic interests of the schools. In this connection it may be stated that at the last annual meeting of the Medical Society of the County of New York, held during the past autumn, the Committee on Hygiene made an elaborate report on the overcrowding of the public schools, which has excited considerable interest.

It states that five years ago the committee submitted a report on the same subject, and that this year a more thorough effort has been made to detect possible defects. After giving the statistics in reference to attendance, seating capacity, the refusal to admit pupils, etc., the report goes on to say that the facts presented make it plain that the school administration must be watchful and efficient to be safe. The necessity of vigilance is further emphasized by the result of the examination of the water-closets at the schools, which are said to be well constructed, but badly kept; also by the reports from various quarters of children being kept in school when suffering from whooping-cough and other infectious diseases; indicating that there have been serious abuses in this direction. The teachers' interest in keeping their classes full and up to the standard, it is pointed out, has been mainly responsible for the attendance of children who should not have been permitted to mingle with the other pupils. In conclusion, the committee recommend that:

First. The system of marking and awards for regular attendance of school children should be so adjusted as to impose no avoidable penalty for absence on account of illness.

Second. The recess at noon should last at least one hour and one-half. No scholar should be detained for any reason during the noon recess.

Third. The salaries of principals and teachers should be less directly dependent on the average attendance than it now is.

Fourth. The regulations which are in force regarding vaccination and contagious diseases among public school children should be extended and rigidly enforced in all day schools, including all private and denominational schools of every description.

At the last meeting of the Section on Laryngology and Rhinology of the Academy of Medicine, Dr. George H. Fox read the report of a case of erythematous lupus of the face and oral cavity; after which a general discussion on lupus of the respiratory mucous membrane took place. On the same evening Dr. H. Holbrook Curtis presented the report of a case of cocaine-habit with remarks on the dangers of the use of cocaine which were based on about two hundred cases which he had collated from various sources. The fact that Dr. Karl Köhler, of Vienna, to whom the discovery of the valuable anæsthetic properties of cocaine is due, was present on this occasion, lent an additional interest to the subject, and in the discussion he stated that he made it a rule never to prescribe the drug in his practice. "Whenever I use it," he said, "I administer it myself, and then the patient cannot procure more of it by simply having a prescription refilled." He also stated that, as a rule, he never used a solution stronger than five per cent., since he found the results obtained from it quite as good as from a stronger solution. It only required a little more time to act. In subcutaneous injections even a weaker solution should be employed, and he had found a two per cent. solution quite effective.

NEWS ITEMS.

Statistics of Leprosy in the United States.—With reference to the increase of leprosy in this country the following request has been received: In view of the general impression that leprosy is spreading in this country, it is desirable, in the interest of the public health, to obtain accurate information upon this point. The undersigned is engaged in collecting statistics of all cases of leprosy in the United States, and he would ask members of the profession to aid in this work by sending a report of any case or cases under their observation, or coming within their knowledge. Please give location, age, sex, and nationality of the patient, and the form of the disease—tubercular or anæsthetic; also any facts bearing upon the question of contagion and heredity. Address, DR. PRINCE A. MORROW, *Journal of Cutaneous and Genito-Urinary Diseases*, 66 West Fortieth Street, New York.

Prizes of the Spanish Medico-Chirurgical Academy.—The Spanish Medico-Chirurgical Academy offers prizes for the best essays on the following subjects: 1. Modern Discoveries in Physics applied to Medicine: have they Advanced the Science of Diagnosis? 2. Limits of the Expectant Method and the Therapeutic Value of Hygiene

in Chronic Diseases of the Stomach. Each prize will consist of 250 pesetas ($50), with the title of Corresponding Member of the Academy. Essays may be written in Spanish, Portuguese, French, Italian, English, or German. Each essay must bear a motto, the name and address of the author being sent in a separate sealed envelope. All essays must be in the hands of the Secretary (Montera, 22, *bajo*, Madrid), on or before September 15, 1890.

The Carriage of Infection by Physicians.—With reference to the communication of contagious diseases by physicians, a question that is now being agitated in England, a correspondent of the *British Medical Journal* writes that "although it cannot be denied that it is possible for a medical man under some circumstances to convey infection from one patient to another, the risk of this taking place is, if ordinary precautions be taken, almost *nil*. This is clearly shown by the experience at the London Fever Hospital, where the resident medical officer in the discharge of his duties is constantly passing from the scarlatina department to the departments for measles, typhoid, diphtheria, etc., and yet it has never been found that he transfers these different contagia, although he would be much more likely to do so than an ordinary practitioner, inasmuch as the poison is necessarily more concentrated in a fever ward than in a room where only one patient is treated. The medical attendant is not, as a rule, brought into sufficiently close and prolonged connection with his patient for his clothes to receive any very large amount of the contagion, and a short exposure to the open air is generally sufficient to disinfect him. Nurses, no doubt, whose clothes from prolonged and constant contact with the patient become saturated with the poison, may readily convey infection. The only precautions taken by the physicians to the fever hospital—and a long experience has shown them to be quite sufficient—are to wear a special outer garment and cap in the wards, but even this is not done by the resident medical officer.

"For all ordinary purposes washing the hands in a disinfecting solution and a short exposure to the fresh air will, I am sure, sufficiently disinfect the practitioner, though it is advisable that he should change his coat, and he ought, as far as possible, visit his infectious cases last.

"In the case of smallpox, however, where the poison is present in a liquid form, and may possibly get smeared on the clothes, a change of clothes is necessary."

College Athletics.—There is a tendency in college sports and athletics that is the reverse of commendable. Foot-ball, the bicycle, and the cane-rush have each resulted, of late, in death or serious injury. Some of the players at foot-ball enter a game knowing that the chances are against their being able to participate in a second match, as they expect to be laid up for the rest of the season. It is idle to assert that the players when excited cannot control their energies within the limits of gentlemanly contention. It has been done here formerly, it is done elsewhere now, and it must be done by such professional athletes as ball-players, or they will become unpopular, and there should be no leniency shown to that sort of college athletics which will not courteously obey such rules as have been devised to prevent the maiming and disfigurement of those who engage in the college contests. Those who have been in the habit of contributing to the athletic funds of the collegians will do well to admonish their young friends that what they wish to countenance is not brutality, but a fair and knightly competition. That this point is not too fine-spun is shown by the accounts of two recent foot-ball matches, in which two of the contestants were kicked in the head.

A Balneological Investigation.—Dr. L. Blanc, of Aix-les-Bains, and medical director of the principal sanitarium at that place, has been sent to this country by the French Government for the purpose of investigating the properties of the medicinal mineral springs of this country and the British Provinces.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 10 TO DECEMBER 16, 1889.

HALL, JOHN D., *Major and Surgeon* —Is granted leave of absence for ten days, to take effect upon being relieved from duty at Fort Niagara, New York.—Par. 11, *S. O. 255, A. G. O., Washington*, December 7, 1889.

By direction of the Secretary of War, EDWARD C. CARTER, *Captain and Assistant Surgeon*, will be relieved from duty at Willett's Point, New York, upon the arrival at that station of Clarence Ewen, Major and Surgeon, and will then proceed to Fort Walla Walla, Washington Territory, and report in person to the commanding officer of that post for duty, reporting also by letter to the commanding general Department of the Columbia.

BALL, R. R., *First Lieutenant and Assistant Surgeon.*—Is relieved from temporary duty at Fort Sill, Indian Territory, and will return to his proper station, Fort Riley, Kansas.—*S. O. 182, Headquarters Department of the Missouri, Fort Leavenworth, Kansas*, December 12, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE TWO WEEKS ENDING DECEMBER 21, 1889.

ROSS, J. W., *Surgeon.*—Detached from the Navy Yard, Pensacola, Florida, and placed on waiting orders.

KITE, I. W., *Assistant Surgeon.*—Detached from the Naval Hospital, Philadelphia, Pa., and ordered to the Navy Yard, Pensacola, Florida.

ROGERS, B. F., *Surgeon.*— Ordered to special duty at Norfolk, Virginia.

LEACH, PHILIP, *Passed Assistant Surgeon.*—Ordered to duty at the Naval Academy, Annapolis, Maryland.

PICKERELL, GEORGE MCC., *Assistant Surgeon.*—Ordered to the Navy Yard, Washington, D. D., for temporary duty.

PROMOTIONS.

KITE, I. W., *Assistant Surgeon.*—Promoted to be a Passed Assistant Surgeon.

STONE, E. P., *Assistant Surgeon.*—Promoted to be a Passed Assistant Surgeon.

NORTON, O. D., *Assistant Surgeon.*—Promoted to be a Passed Assistant Surgeon.

HENRY, CHARES P., *Assistant Surgeon.*—Placed on the Retired List.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

INDEX.

ABDOMEN, compression of, in treatment of dyspepsia, 476
pathology of surgery of, 16
pistol-shot wound of, 28
stab wounds of, 661
Abdominal disease, laparotomy in diagnosis and treatment of, 415
section for traumatism, some further considerations and statistics, 51
report of a series of, 446
surgery; its relations to concealed pregnancy, 15
modifications in technique of, 93
Abscess, antiseptic treatment of, 465
corneal, 107
double psoas, following Pott's disease, 303
hepatic, treatment of, 410
of brain emptying into naso-pharynx, 471
of liver; operation, death, 397
of pelvis, 218
retro-pharyngeal, 138
simulating carcinoma of breast, 290
Absorption of a bone dowel, 54
Abuse of uterine treatment, 621
Acetanilide in pædiatric practice, 23
Acid, carbolic, 409
chromic, for perspiring feet, 12
phenic, an antidote for, 196
sublimate, treatment of diphtheria with, 348
Acne, prescription for, 665
Acute intestinal obstruction complicating hernia; herniotomy, subsequent laparotomy, 370
miliary tuberculosis, cases of, 64
Adenitis, naphthalin injections in, 549
Adler, prolapse of womb, 121
Air-passages, creasote for diseases of, 491
Albumin in normal urine, 292
Albuminuria, prognosis of, 293
with reference to prognosis and life insurance, 327
Alcohol in puerperal fever, 267
Alcoholic paralysis with central lesions, 55
Alcoholism, international congress of, 304
strychnine in, 270
Alexander's operation, with a new method of securing the round ligament, 18
Allen, southern California as a winter resort, 404
Alopecia, bacilli of, 376
simplex, 488
Amblyopia, due to chloral hydrate, 132
from tobacco, 135
use of pilocarpine in, 465
Amenorrhœa, treatment of, 42
American and British pint, 29
Ametropia, determined under mydriasis, 132
Ammonium carbonate, an antiseptic, 697
Amyloid degeneration of the pancreas, 208
Anæmia and Hodgkin's disease, 365, 393
and its treatment, 436
pernicious, 365, 393
relations of, to chlorosis, 421
Anaërobic bacteria, cultivation of, 111
Anæsthesia, mixed method of, 612
Anæsthetic, dental, 239, 612
leprosy, a contribution to, 81
methyl chloride as a local, 612
Anal fissures, salve for, 267
Anastomosis, intestinal, 634
Anatomical and physiological relations of lesions of the heart and kidneys, 362
Angina pectoris, treatment of, 10
Angioma, treatment of, by electrolysis, 438
Animal suture, cure of hernia by, 51
Ankylosis of jaw, successful operation, 465
Antacids in dyspepsia and gravel, 266
Anthrarobin, 295
Antifebrin poisoning, 209
in rheumatism, 641
therapeutic properties of, 182
Antiseptic injections, in obstetrics, 382
operations, dry, 629
properties of ammonium carbonate, 697
of saliva, 324
solution, 70
treatment of abscess, 465
Antipyrin, 438
incompatibilities of, 723
in diabetes, 42, 351
in enuresis, 184
in labor, 12
in menstrual colic, 294
in sciatica, 210
in whooping-cough, 550
rapid cure of chorea by, 10
urticaria treated with, 240
Antipyretic, guafine, 184
hydracetin, 9
methacetin, 43
Antiseptic operations, dry, 639
treatment of variola, 269
Anti-vivisection hospital, 392
Anomaly of chest organs, 191
Aortic regurgitation, digitalis in, 543
Aphasia, sensory, pathology of, 83
Aphthous stomatitis, 99
Aplasia, case of fœtal, 555
Apnœa, 725
Appendicitis, treatment of, 547
intestinal obstruction and perforation in, 578
operation, recovery, 579
Arms, rupture of biceps muscle of, 372
Army medical board, 299
of U. S. changes in medical corps, 28, 84, 140, 168, 196, 224, 280, 308, 336, 392, 420, 532, 560, 588, 704
Arrack in diphtheria, 295
Arsenical paralysis, 378
Aseptic bone cavities, 297
Ashhurst, hip disease, 545
lateral curvature of spine, 545
Association, American Public Health, 298
British Medical, 129, 242, 502
Canadian Medical, 329
Lehigh Valley Medical, 159
Mississippi Valley Medical, 243
of American Anatomists, 676
of American Physicians, 222
of Life Insurance Directors, 676
Southern Surgical and Gynecological, 298, 475
State Medical, 73
United States Hay-fever, 187
Asthma and the uterine system, 323
bronchial, climatic treatment of, 253
causation and treatment of, 22
menthol in, 697
sexual, 350
Astigmatism, lenticular regular, 281
Atrophy, muscular, peroneal form of, 109
of nasal septum, 473
Auditory troubles from use of telephone, 239
Auto-infection, 160
Autopsy building, new, 390
BACILLI, form of, in leprosy and tuberculosis, 246
notes on the baking of, 192
of alopecia, 376
Bacillus, a new tubercle, 237
of pertusis, 698
tuberculosis, possibility of establishing tolerance for, 435
Bacteria, cholera, vitality of, in milk, 156
cultivation of anaërobic, 111
effects of salt on, 639
in ice from Lake Mendota, 169
relation of, to puerperal eclampsia, 299
Baldness, treatment of, 11
Baldy, cases of appendicitis; operation, recovery, 579
Balsam, Peruvian, as a germicide, 184
Baltimore, College of Physicians and Surgeons of, 139
correspondence, 474
Baly, memorial of Royal College of Physicians, 213
Bandages, fastening without tape, 581
plaster, a machine for preparing, 234
Barber's itch, treatment of, 547
Bartholow, treatment of influenza, 710
Basle, typhoid fever at, 308
Basedow's disease, diagnosis and treatment of, 161
Belgium, surgical appliances on trains in, 299
Beef, corned, poisoning with, 336
-tea, 407
Beer, Pilsner, as a diuretic, 196
Berlin, typhoid epidemic in, 238
Beyer, preparation of drainage tubes from the arteries of animals, 113
Biborate of soda in epilepsy, 154
Biceps muscle, rupture of, 372
Biliary secretion, influence of olive-oil on, 464
Billings, Frank, osteo-sarcoma of spine, 538
Billings, John S., honorary degree from Oxford, 46
vital and medical statistics, 561, 678, 706
Bishop, W. Irving, case of, 504
Black, Porro-Cæsarean section, 430
Bladder, extroversion of, 47
operation for stone in, 48
treatment of chronic catarrh of, 295
Bleeding in puerperal eclampsia, 331
Blennorrhagia, oxygenized water in, 269
Blepharitis, solution for, 665
Blockley Hospital, changes in, 391
examination, 391
Body, relative growth of organs of the, 270
Boiled milk, digestibility of, 612
Bone cavities, healing of aseptic, 297
implantation, 714
Brachial plexus, spontaneous degeneration of, 25
Brain, abscess of, 109
case of, emptying into the naso-pharynx, 471
dog without a, 307
Brains, Chinese, description of two, 82
insular sclerosis of the, 533
Breast, carcinoma in the male, 290
tumor of, 647
British and American pint, 29
Brokaw, intestinal anastomosis, 634
Bromoform in whooping-cough, 238, 468, 666
Bronchitis, capillary, in children, 70

Bronchitis pineapple juice in, 697
Brower, trifacial paralysis, 677
spinal irritation, 677
Brown Sequard, hypodermic fluid, 112
theory, experimental study of, 237
Bullet, use of polariscope for locating, 53
Bulletin, "Merck's," 243
Bunion, operative treatment of, 487
Burnett, C. H., chronic purulent discharge from the ear, 482
Burnett, S. M., lenticular regular astigmatism, 281
Burns, ice in the treatment of, 239
pathology of, 407
treatment of, with iodoform, 238, 293
Bursa, pharyngeal, cyst of, 254

CACTUS grandiflorus in cardiac affections, 125
Cæsarean section, successful, 587
suture in, 190
Caffeine in migraine, 73
value of, in adynamic conditions, 323
Calculi, urinary, choice of operations for the removal of, 404, 648
California State Board of Health, 588
Camphorated naphthol in tuberculous ulcerations, 270
soap, 239
Canadian Medical Association, 329
Cancer, mammary, causes of recurrence of, 326
morphine-vaseline in, 71
of the gall-bladder, 362
of the rectum, treatment of, 325
uterine, deodorizing injection for, 609
Cannabin, treatment of goitre with, 326
Capillary bronchitis in children, 70
Carbolic acid, 409
dangers of, 336
in furuncles, 550
Carbonic oxide poisoning, peripheral paralysis from, 55
Carbondale, diphtheria at, 618
Carcinoma of the liver, 485
Cardiac affections, cactus grandiflorus in, 125
iodides in, 12
remedy, new, 406
Cartwright lecture, 561, 678
prize, 74
Castor oil tablets, 640
Catarrh of the bladder, treatment of, 295
of rectum, treatment of, 721
post-nasal, wash for, 609
treatment of chronic nasal, 473
Catarrhal neuralgia, 474
Catgut, disinfected, 161
Catheter, a novel, 416
Cause of chlorosis, 559
of death from burns, 438
of recurrence of mammary cancer, 326
Cauterizer, minimum, 323
Cedar oil, 364
Census of 1890, 588
its relation to blindness, 135
Central nervous system, surgery of, 57
Cerebral lesions, differences of temperature in, 99
Cerebro-spinal meningitis, 109
Cervix uteri, carcinoma of, 485
Chalybeate and saline tonic, 12
Chancres, soft, scraping of, 296
Chapman, diphtheria at high altitudes, 345
Chapped hands, 99
Charlton, subcutaneous herniotomy, 638
Cheap medical service, 307
Chest organs, anomaly of the, 191
Chicago letter, 614
Chicken's cornea, transplanting of, 408
Childbed, ergot in, 239
Children, empyema in, 550
intestinal diseases of, during hot weather, 20
Lakeside summer hospital for, 243
Children, litholapaxy in, 49
tuberculosis in, 492
use of strophanthus in, 488
vulvo-vaginitis in, 139
Chilblains, treatment of, 43
China, cholera in, 391
Chinese, army and navy service, 586
Chloral, case of amblyopia due to, 132
in scarlatina, 654
Chloralamid, 236, 296, 610
Chloroform, death from, 435
decomposition by gaslight, 326
local application of, in epididymitis, 182
narcosis, case of, 375
Chlorosis, causes of, 559
oxygen in leukæmia, 491
relation between and simple anæmia, etc., 365, 395, 421
Chlorotic dysmenorrhœa, 98
Choice of operations for vesical calculus, 407
of treatment of urinary concretions, 49
Cholera bacilli, influence of salol upon, 14
bacteria, vitality of, in milk, 150
in China, 39
in Mesopotamia, 391
on the Euphrates, 419
epidemic of, 43
hereditary, third case of, 39
Chorea, rapid cure of, by antipyrin, 10
Choroiditis from meningitis, 131
Chromic acid for perspiring feet, 12
radical cure of hay-fever with, 417
Chronic cystitis, 582
endocarditis, 75
gonorrhœa, 492, 551
nervous urticaria treated with antipyrin, 240
peritonitis, differential diagnosis of, 498
rhinitis, causing ocular irritation, 137
sciatica, pathology and treatment of, 54
suppurative otitis media, 104
tonsillitis, 339
typhlitis and perityphlitis, massage in, 70
ulcer, grafts of frog's skin in, 10
Chrystie, method of treating umbilical hernia in infants, 374
Chyle, effusions of, in serous cavities, 357
Cicatricial contraction of fingers, 216
Cigarette law, 46, 504
Cinchonism, and means of preventing it, 296
Cincinnati Academy of Medicine, 470
Hospital, 475
Circumscribed œdema of the skin and paroxysmal hæmoglobinuria, 247
Cirrhosis of the liver after repeated aspiration; recovery, 398
Climate for invalids, psychological factor, 173
influence upon nervous activity, 146
ocean, therapy of, 114
Climatic changes in bronchial asthma, 253
Climatology of hemoptysis in chronic lung disease, 200
Club-foot, 303
Cocaine poisoning, 71, 407
injections in spastic contractions, 43
Cocillana in diseases of the lungs, 197
Cod liver oil, administration of, 44, 156
Co-education of the sexes, 667
Cohen, an ethical question, 427
Cold abscess, naphthalin injections in, 549
subjective sensations of, 361
Colic, menstrual, antipyrin in, 294
College of Pharmacy, 448
of Physicians and Surgeons of Baltimore, 139
Woman's Medical, of Philadelphia, 102
Collodion, hemostatic, 10
Collyria to prevent hernia of the iris, 550
Colorado, climate of, 617
mineral springs of, 284, 320
Colored spectacles, 462
Comminuted fracture of the humerus, 137
Comparative results in 99 cases of pleurisy, etc., 63
Compound comminuted fracture of the forearm, 137
fracture, conservative treatment of, 403
Concretions, urinary, treatment of, 49
Confinement, effect of ergot after, 486
Congenital dislocation of the hip, 534
umbilical hernia, 137
Congress, Fifth International Veterinary, 354
International Hygienic, 112
of Alcoholism, 304
of Dermatology and Syphilography, 248
of Therapeutics, 275
organization of 1890, 252
of American Physicians and Surgeons; 353
on hypnotism, 336
Second Italian, for Intern. Medicine, 350
Seventh International Pharmaceutical, 380
Tenth International Medical, 73
Conjugal diabetes, 269
Conjunctivitis, ointment for, 581
herpetic, treatment of, 126
Constipation, infantile, formula for, 268
treatment of, with electricity, 44
Consumption, food in the treatment of, 80
influence of ocean atmosphere on, 119
institutions for, in U. S., 257
open-air travel in, 343
prevention of the spread of, 56
Contagion and free libraries, 28
Contagious diseases, responsibility in, 271
Contagium of diphtheria, 372
Continued diarrhœa and its treatment, 603
Contractions, cocaine injections in, 43
Convulsions after delivery, 302
Cord, umbilical, dressing for, 296
Cordell, prevention and arrest of puerperal mastitis and abscess by frictions, 231
Corneal abscess, 107
transplantation, 130
Corns, salicylic acid in the treatment of, 581
Cornutin, 126
in uterine hemorrhage, 486
Corrosive sublimate, hypodermatically, 491
in dysentery, 840
Coryza, prognosis of, in young children, 210
treatment of, 210
Cotton-seed oil in gall-stone colic, 573
Cough, nervous, 269
uterine, treatment of, 181
Coughing, reduction of hernia during, 462
Craighill, case of chloroform narcosis, 375
Craniotomy and its indications, 18
Creasote, 492
for diseases of the air-passages, 491
in flatulence, 10
in phthisis, 325
Cremation in France, 121
Creolin eczema, 155
Creolin in cystitis of the female, 598
in dysentery, 70, 269
Cricoid cartilages, fracture of, 71
Croup, spasmodic, treatment of, 155
Croupous pneumonia, 554
Cultivation of anaërobic bacteria, 111
Cultures from vaginal secretions, 324
Cupro-potassic solution, detection of sugar with, 490
Curability of locomotor ataxia, 497
Cure for oxyuris vermicularis, 270
Curette, use of, in anterior trachoma, 107
Currier, vulvo-vaginitis in children, 3
Curtin, climatology in lung disease, 280
Cyst, chylous, of the mesentery, 52
laparotomy in case of dermoid, 371
of the pharyngeal bursa, 254
Cystitis, case of, 605
chronic, 126, 582
use of creolin in, 399
Cystotomy, suprapubic, in a case of enlarged prostate and false passage, 236
Cysts, multiple, of the iris in both eyes, 130
of the auricle, 106

DaCosta, J. M., diabetes insipidus cured by ergot, 347
hysteria with peculiar symptoms, 292
phlebitis following typhoid fever, 265
DaCosta, J. C., mistaken diagnosis, 637
Dairy farms, sanitary administration of, 101
Deaver, bone implantation, 714
Debauch, after-treatment of, 638
Dengue, 637
Dioxide of hydrogen in surgery, 716
Diphtheria at high altitudes, 345
in Maine Insane Asylum, 129
Direct herniotomy, 687
Dressing to lie next the wound, 50
for the umbilical cord, 296
Drowning, resuscitation from, 243
Drunkard, responsibility of, 392
Dry antiseptic operations, 629
Dysentery, corrosive sublimate in, 640
creolin in, 70, 269
Dysmenorrhœa, chlorotic, 98
exalgin in, 70
prescription for, 696
Dyspepsia, abdominal compression in, 376
and gravel, antacids in, 266
Dyspeptic insomnia, 12

Ear, bleeding in, 331
epithelioma of, 105
purulent discharge from, cured by operation, 482
Echophotomy, 462
Eclampsia during labor, 202, 301
puerperal, 300, 301
relation of bacteria to bleeding in, 299, 331
Eczema from creolin, 155
treatment of, 134, 324, 434, 487, 665
Electricity at Howard Hospital, 420
habitual constipation treated with, 44
Electrolysis in stricture of rectum, 53
treatment of uterine tumors with, 13
Elongation of cervix, 121
Empyema in children, 550
Endocarditis, chronic, 75
Endometritis, iodoform in, 609
suppositories for, 294
treatment of, 665
Enema, solution of magnesium sulphate as, 558
Enteric fever, naphthalin in, 549
Enuresis, antipyrin in, 184
Ephedrin and pseudo-ephedrin, 11
Epidemic of chorea, 43
typhoid, from polluted water, 72
Epididymitis, chloroform in, 182
Epilepsy, amylene in, 270
biborate of soda in, 154
case of focal, trephining and excision of motor centres, 108
peripheral, 705
trephining for, 611
Epistaxis, lemon juice in, 99, 408
Epithelioma of middle ear, 105
Equino-varus, double, operation, 137
hysterical, 216
Ergot, diabetes insipidus cured by, 347
Erysipelas, treatment of, 41, 43, 464
Erythema, papular, powder for, 465
Etiology of puerperal eclampsia, 274
of typhoid fever, 76
Eucalyptus in headache, 62
in malaria, 632
in whooping cough, 639
Euphrasia, in acute coryza, 610
Evans, case of idiosyncrasy to quinine, 375
congenital dislocation of hip, 533
Exalgine in dysmenorrhœa, 70
Examining Board of United States Navy, 273
Excision of wrist-joint, 660
Excretion of phosphates in rickets, 270
Execution by electricity, 418
Exophthalmic goitre cannabin in, 326
Exostosis of pubis, 53
Expectorant potion, 182
Explosive mixtures, 666
External infection in its bearing on preventive medicine, 29, 45
of uterus by Zuckerkandl's method, 190
Extra-uterine pregnancy, 17, 161, 189
Extroversion of bladder, 47
Eye operations, needless restraints after, 136
evisceration of, 135
Eyes, effect of naphthalin on, 612

Facial paralysis, 705
Fatal case of actinomycosis hominis, 187
result of a wasp sting, 408
Feces, impacted, intestinal obstruction from, 463
Feet, perspiring, 209
Female medical students in India, 336
Femur, osteotomy for overlapping union of, 484
Fever, high temperature in; recovery, 225
puerperal, alcohol in, 267
typhoid, at Basle, 308
etiology of, 76
Fibro-cystic tumor of uterus, 447
Fibroids, hysterectomy for, 324
Fibroid tonsil, 179
tumor of nasal septum, 179
Fingers, contraction of, 216
Fish poisoning, 411, 549
Fissure of tongue, 266
Fistula, vesico-vaginal, position in, 322
Flint disease, 504
Focal epilepsy, later history of a case of, 108
Food in treatment of phthisis, 80
Foods, official investigation of artificial, 335
Forchheimer, relations of anæmia to chlorosis, 421
Forearm, compound comminuted fracture of, 137
Formulæ for aphthous stomatitis, 99
for cod-liver oil, 44
for cornutin, 126
for infantile constipation, 268
for migraine, 492
for uterine hemorrhage, 487
Fracture, compound, conservative treatment in, 403
of patella, Malgaigne's hooks in, 214
of skull, case of, 554
of thyroid and cricoid cartilages, 71
Fraud in life insurance, 307
Fraudulent medical diplomas, 392
Free dispensary and hospital work, 18
libraries and contagion, 28
Frog's skin grafts in ulcers, 10
Function of digestion in phthisis, 157, 436
Furuncles, carbolic acid in, 550

Gall-stone colic, action of olive or cotton-seed oil in, 573
Galvanism in extra-uterine pregnancy, 17
Garland, pathology of hemoptysis from chronic pulmonary disease, 178
Gastric neurasthenia, 361
ulcer, treatment of, 486
Gastro-enteritis, food for, 640
-intestinal catarrh in infants, 1
Gelsemium, torticollis improved by, 543
General muscular paresis, 138
Gihon, therapy of ocean climate, 114
Glaucoma following cataract operations, 136
iridectomy and sclerotomy in, 106, 181
simple chronic, 105
Glover, dengue, 637
Glycerine tampons in ozæna, 376
Goitre, ointment for, 640
parenchymatous injections in, 582
Gonococci, exophthalmic, cannabin in, 326
Gonorrhœa, chronic, 492, 551
gonococcus in diagnosis and treatment of, 133
Gonorrhœal orchitis, treatment of, 547
pyosalpinx, 161
urethritis, diagnosis of, 247
Goodell, abuse of uterine treatment, 621
Gout, quiet, 437
Grafts of frog skin in ulcers, 10
Granular lids, treatment of, 12
Green, penetrating stab-wounds of abdomen, 661
Guafine, a new antipyretic, 184
Gunpowder stains, removal of, 664
Gunshot wounds of abdomen and intestines, 499, 541
Gynecology, sacral operations in, 349

Habitual constipation, electricity in, 44
Hæmoglobinuria and œdema of skin, 247
Hæmaturia, 581
Hair tonic, 238, 377
Hay-fever, chromic acid in, 417, 501, 559
Headache, eucalyptus in, 62
Healing of aseptic bone cavities, 297
Hearing, defective, quinine in, 473
Heart and kidneys, anatomical and physiological relation of lesions of, 362
and valves, physiology of, 553
idiopathic enlargement of, 377
massage of, 409
Hemoptysis, climatology of, 200
from chronic pulmonary disease, 178
non-tubercular and non-cardiac, 610
treatment of, other than climatic, 204
Hemostatic collodion, 10
Hemorrhage, accidental, 599
ante- and post-partum, 607
from penis of child, 607
from umbilical cord, 268
hypodermatic injection of salt solution for, 664
intra cranial, 456
treatment of post partum, 351
uterine, hydrastis canadensis in, 549
formula for, 487
Hemorrhoids, treatment of, 268, 640
Henry, chlorosis, simple anæmia, pernicious anæmia, leucocythæmia, and Hodgkin's disease, 365
diagnosis and treatment of functional disorders of stomach, 499
Hepatic abscess, treatment of, 410
Hereditary chorea, third case of, 410
Heredity of myopia, 98
Hernia, cases of, 606
congenital umbilical, 137
large, management and treatment of, 50
of the iris, collyria to prevent, 550
properitoneal, 51
radical cure of, 51, 496
strangulated inguinal, 662
McBurney's operation for, 110
ovarian, in infants, 183
umbilical, in infants, treatment, 374
Herniotomy, subcutaneous, 638
Herpes, infectiousness of, 210
zoster, treatment of, 489
Heustis, new position for operation for vesico-vaginal fistula, and other operations on the uterus and vagina, 322
Hiccough, treatment of, 126
Hip disease, 216, 545
Homerania in tuberculosis, 269
Homœopathy, modern, 440
Hospitals of Orient, 370
Hot-air inhalations in phthisis, 180, 354
Huber, observations on unity of phthisis and tuberculosis, 7
Humerus, comminuted fracture of, 137
Hydatid of liver, laparotomy for, 436
Hydracetin, a new antipyretic, 9
Hydrastis Canadensis, action of, 126
in uterine hemorrhage, 549
Hydrate of amylene in epilepsy, 270
Hydrobromate of homatropine, for controlling accommodation, 132
Hydrochloric acid after a debauch, 638
Hydrogen dioxide in surgery, 716
Hydronephrosis and renal atrophy resulting from disturbance of micturition, 141
Hygiene in European universities, 14
Hygienic Congress, International, 112

Hyoscin, hydrochlorate of, as a sedative, 437
Hyperostosis cranii, 25
Hypertrophic elongation of supra-vaginal portion of cervix, 121
Hypertrophy, atrophy, and deviations of the nasal septum, 473
pseudo muscular, 109
Hypnotic, chloralamid a new 236
Hypnotism and Suggestibility, 554
in therapeutics, 493
Hypodermatic injections of carbolic acid, 586
injections, 247
of carbolic acid in erysipelas, 582
Hysterectomy and an operation for tubal pregnancy, 556
for fibroids, 324
two cases of vaginal, 556
Hysteria, infantile, 267
with peculiar symptoms, 292
Hysterical equino-varus, 216

ICE in treatment of burns, 239
of lupus, 462
of pneumonia, 238
Idiopathic contractions, in infancy and childhood, 244
enlargement of heart, 377
Idiosyncrasy to quinine, peculiar case of, 375
Ileus, medical treatment of, 437
Illegitimacy in Vienna, promotion of, 196
Imaginary bodies in throat, 554
Infantile hysteria, 267
Infants, management of, during first year, 19
Infection, external sources of, in relation to preventive medicine, 29, 45
tuberculous, channel of, 69
Infectiousness of herpes, 210
Inflammation of tympanic attic and perforation of Shrapnell's membrane, 103
rhino-pharyngeal, importance of treatment in, 473
Influenza, treatment of, 610, 710, 724
Ingals, chronic tonsillitis, 33
Inguinal hernia, strangulated, 662
Inhalation, hot air, in pulmonary tuberculosis, 180, 364
oxygen, 461
Injections for leucorrhœa, 270
mercurial, variable toxic power of, 247
of salt and water, after severe hemorrhage, 268, 486
subcutaneous saline, 486
Inoculation of leprosy, 133
through vaccination, 99
Insane Asylum, Newcastle, Delaware, 299
Insufficiency of ocular muscles, 132
Insular sclerosis of brain, 533
Insurance, life, albuminuria with reference to prognosis and, 327
Intermediate trachelorrhaphy, 415
Interpeduncular myxosarcoma, 26
Intestinal absorption, massage for, 466
anastomosis with rubber rings, 634
diseases of children during hot weather, 20
obstruction, subsequent laparotomy, 370
appendicitis, followed by perforation of the bowel above the seat of obstruction, 578
from impacted feces, 463
with strangulated hernia; herniotomy, subsequent laparotomy, 370
Intestines, gunshot wounds of, 499
medical treatment of obstruction of, 184
Intra-pelvic disease, 415
-tympanic muscles, physiology of, 105
Intubation of larynx, 21
Invalids, psychological factor in selecting a climate for, 173
Iodoform gauze in endometritis, 609
in post-partum hemorrhage, 665
in scrofulosis, 581
treatment of burns with, 293
Insomnia, dyspeptic, 12
Iodides in cardiac affections, 12
Iodine, tincture of, as cure for warts, 208
Isolation of dangerous industries, 588
Iridectomy and sclerotomy, indications for, in glaucoma, 181
in glaucoma, 106
Iris, collyria to prevent hernia of, 550
multiple cysts of, 130
Iritis, paralysis of sphincter in, 132
Irrigation of the anterior chamber, 108
post-partum, with hot water, 44
treatment of gastro-intestinal catarrh in infants, 1
Itch, petroleum soap for, 10

JACKSON, sectarianism in medicine, 425
Jaggard, note on accidental hemorrhage, 599
Japan, medical schools in, 329
vaccination in, 308
Jaw, operation for ankylosis of, 465
Jefferson Medical College, 460
Jelly-fish sting, 336
Johns Hopkins Hospital, opening of training school of, 419
Johnstown relief, 224

KAVANAUGH, observations on sulphonal, 8
Keratitis, scrofulous, salve for, 182
Kidney, anatomical and physiological relations of heart and, 362
case of nephrotomy for the removal of calculus of, 419
horseshoe, nephrotomy in, 155
sarcoma of, 695
King, third case of hereditary chorea, 39
Knight, climatic changes of bronchial asthma, 255
Knock-knee; clubfoot; deformity following hip disease, 303
Kretz-chmar, institutions for treatment of pulmonary consumption in U. S., 257

LABOR, antipyrin in, 12
premature, induction of in Bright's disease of pregnancy, 75
treatment of eclampsia during, 302
Lactose, a new diuretic, 350
Lake-side Summer Hospital for Children, 243
Laminaria tents in stricture of œsophagus, 156
Lanolin in the treatment of urethritis, 184
Laparotomy and herniotomy, 370
for hydatid of the liver, 436
in case of dermoid cyst, 371
in diagnosis and treatment of intra-abdominal and intra-pelvic disease, 415
upon a newborn infant, 182
Laplace, osteotomy for overlapping union of a fracture of femur, 484
Larynx, intubation of, 21
Lateral curvature of spine, 545
Laveran's organism, 723
Lead in the urine, 363
white, in the treatment of erysipelas, 368
Leg ulcers, chronic, treatment for, 406
Lehigh Valley Medical Association, 159
Lemon-juice in epistaxis, 99, 408
Lenticular regular astigmatism, 281
Leprosy, anæsthetic, 81
bacilli of, and tuberculosis, 246
in Hawaii, 335
in Minnesota, 618
inoculation of, 133
in the Sandwich islands, 476
statistics of, in U. S., 727
Lesion, intra-ocular and cerebral, 135
of the heart and kidneys, 362
of the pons, 496
Leucocythæmia, Hodgkin's disease, simple anæmia, pernicious anæmia, chlorosis, 395
Leucorrhœa, injection for, 270
Leukæmia and chlorosis, oxygen in, 491
Lewis and de Schweinitz, preliminary note on use of eucalyptus in headache, 62
Library, medical, for Chicago, 102
Limbs, upper, nervous affections of, 42
Lime as a disinfectant, 269
Lingual tonsillitis, 693
Listerian method in dressing of wounds, 608
Lithotomy in young children, suprapubic, 98
Liver, abscess of; operation, death, 397
carcinoma of, 485
on recovery from cirrhosis of, after repeated aspirations, 398
laparotomy for hydatid of, 436
Lloyd, intracranial hemorrhage and softening, 456
Lobar pneumonia, mortality of, 85
Locomotor ataxia, curability of, 497
London correspondence, 500
hospitals, 307
post-graduate courses, 336
Lozenges for relief of dryness of throat and mouth, 546
Lung cavities, microörganisms found in, 240
Lupus, treatment of, 134, 462
Lyman, insular sclerosis of brain, 533

MACDONNELL, recovery in cirrhosis of liver after repeated aspirations, 398
Magnesium sulphate as enema, 558
Magnet, extraction from vitreous of pieces of steel by, 130
Magruder, neurectomy for facial neuralgia, 400
Malaria as a cause of degenerative disease of spinal cord, 24
eucalyptus in, 632
Laveran's organism in, 723
Malgaigne's hooks in fracture of patella, 214
Mammary cancer, recurrence of, 326
Management of infants during first year, 19
Mania following gynecological operations, 545
Manley, gunshot wounds, 541
Mann, carcinoma of the cervix uteri, 485
Marine Hospital changes, 112, 168, 280, 420, 476, 560
Maritime Medical Association, 448
Martin, excision of wrist-joint, 660
Massage aiding intestinal absorption, 466
as a therapeutic agent, 377
in chronic typhlitis and perityphlitis, 70
in rickets, 406
of heart, 409
Mastitis, puerperal, prevention and arrest of, by friction, 231
Mastoid-periostitis, thermo-cautery in, 298
Mechanical treatment of erysipelas, 43
Mechanism of rotation in right occipito-posterior positions, 190
Medical and Chirurgical Society, 419
College of Ohio, 475
of South Carolina, 213
library for Chicago, 102
schools in Japan, 329
Society of Virginia, 74
students in Germany, 504
treatment of ileus, 437
of obstruction of intestines, 134
Medicine, progress of, during last fifty years, 354
Medico-Chirurgical Faculty of Maryland, 536
-Legal Society of New York, 645
Megrim, preventive treatment of, 44
Meigs, purulent peritonitis, with perforation of appendix, 572
Melancholia, diagnostic signs of, 108
Membrane, Shrapnell's, perforation of, 103
Memoranda of several cases of hernia, 606
Meningitis, cerebro-spinal, 109
choroiditis resulting from, 131
Menstrual colic, antipyrin in, 294
Menstruation, results of repression of, 414
Menthol in asthma, 697
in phthisis, 549
in pruritical affections, 209

Menthol in pruritus, 437
Merck's Bulletin, 243
Mercury, subcutaneous use of, 466
variable toxic power of, in hypodermatic injections, 247
Merrill, treatment of typhoid fever, 696
Mesentery, chylous cyst of the, 52
Mesopotamia, cholera in, 391
Methacetin, a new antipyretic, 43
Methods of rendering sponges aseptic, 485
Methyl chloride as a local anæsthetic, 612
Metrorrhagia, pills for, 665
Mexico, school of medicine, 102
Michigan, University of, 392
Microbes of tumors, 407, 699
Microörganisms in lung cavities, 240
Microscope in the practice of medicine, 554
photographing with, 717
Micturition, disturbances of, resulting in hydronephrosis and renal atrophy, 141
Migraine, caffeine in, 73
formula for, 492
Milan, smallpox in, 391
Miliary tuberculosis, acute, 67
Milk, drugs excreted with, 638
sterilized, delivered to patients, 503
tuberculous, 363
vitality of the cholera bacteria in, 156
Mineral springs of Colorado, 284, 320
Minimum cauterizer, 323
Mirror, effect upon eye during ophthalmoscopic examination, 132
Mississippi Valley Med. Assoc., 243, 390
Mixed anæsthesia, 812
Moles, treatment of, 721
Monster, double-headed, 19
Morphine in extra-uterine pregnancy, 161
new antidote for, 324
-vaseline, in cancer, 71
Morrison, formation of pigment in negro, 393
Mortality from snakes in Bombay, 15
in Philadelphia, 419
of acute lobar pneumonia, 85, 100
of foreign cities, 364
of pneumonia in malarial and non-malarial districts, 306
Morton, hydrogen dioxide, 716
Mouth, lozenges for dryness of, 546
Multiple cysts of the iris in both eyes, 130
neuritis and infectious meningitis, 109
papillomata of velum, 179
Munich and Memphis, sanitary condition of, 329
Munro, acute miliary tuberculosis, 67
Muscles, biceps, rupture of, 372
ocular, simple tests of, 263
Muscular atrophy, peroneal form of, 109
Musser, eucalyptus in malaria, 632
Mydriasis, ametropia as determined with, 132
Myopia, hereditary, 93
Myrtol, 240
Myxo-sarcoma of optic nerve, 13
interpeduncular, 26

NAPHTHALIN, effects of, on the eyes, 612
in enteric fever, 549
injections in cold abscess and adenitis, 549
Naphthol, camphorated, in tuberculous ulcerations, 270
Narcosis, chloroform, case of, 375
Nasal diseases, ocular symptoms of, 472
septum, fibroid tumor of, 176
National Academy of Science, 538
quarantine stations, closing of three, 46
Natural purification of polluted streams, 167
Navy changes in medical corps U. S., 28, 84, 168, 252, 308, 364, 392, 420, 448, 476, 532, 560, 704
Necrology, foreign, 503
Negro, formation of pigment in, 395
Neilson, strangulated inguinal hernia, 662
Nephrectomy for malignant tumors, 240
Nephrotomy for the removal of calculus of kidney, 419
Nephrotomy in case of horseshoe kidney, 155
Nervous affections of the upper limbs, 42
cough, 269
system, syphilis of, 381
central, surgery of, 57
Neuralgia, catarrhal, 474
gastric, in neurasthenia, 361
neurectomy for facial, 400
partial tenotomies in, 132
Neurectomy for facial neuralgia, 400
Neuritis, multiple and infectious, 109
septic peripheral, due to pyelo-nephritis, 55
spontaneous degenerative, of brachial plexus, 25
Night-sweats, sulphonal in, 463
pilocarpine in, 638
Nitrate of silver in purpura hæmorrhagica, 488
Nitro-hydrochloric acid after debauch, 638
Non-tubercular and non-cardiac hæmoptysis, 610
Nose and throat, reflex inflammation of, 474
surgical treatment in diseases of, 473, 126
soziodolates in diseases of, 126
Nuclear ophthalmoplegia with poliomyelitis, 25
Nutmeg poisoning, case of, 408
Nux vomica, ascending doses of, in the treatment of ocular insufficiencies, 477

OBSERVATIONS on intra cranial hemorrhage and softening, 456
Ocean atmosphere, influence of, on phthisis, 119
climate, therapy of, 114
Ocular irritation, from chronic rhinitis, 147
muscles, simple test of, 263
insufficiencies of, 477
reflex symptoms of nasal diseases, 472
symptoms in general paresis, 131
Œdema of the skin and paroxysmal hæmoglobinuria, 247
Œsophagotomy, 724
Œsophagus, laminaria in stricture of, 156
Official investigation of artificial foods, 335
Ohio Medical College, 475
Oil, olive, influence of, on biliary secretion, 464
or cotton-seed oil in gall-stone colic, 573
Oleate of veratria in the determination of errors of refraction, 132
Oil of cedar, 364
of eucalyptus in malaria, 632
Open air travel in consumption, 343
Operative treatment of bunion, 487
of hypertrophy of the prostate gland, 27
choice of, for stone in the bladder, 48
for removal of urinary calculi, 48
Ophthalmoplegia, with poliomyelitis, 25
Opium, substitutes for, 358
Optic nerve, inflammation and atrophy of, 135
myxo-sarcoma of, 136
sarcoma of, 130
Orbit, treatment of necrosis of the, 130
tumors of, 131
Orchitis, pseudo, 486
treatment of gonorrhœal, 547
variolic, 247
Orthopædic surgery, advances in, 185
Osler, note on intra-thoracic growths developing from the thyroid gland, 257
Osseous tissue, turpentine as an excitant for the production of, 27
Osteotomy for overlapping union of the femur, 484
Osteo-myelitis, following periostitis, 149
of humerus, 619
treatment of acute infective, 191
Osteo-sarcoma of the spine, 538
Otis, psychological factor in selecting a climate for invalids, 173
Otitis media catarrhalis acuta, 104
Otitis with closure of both auditory canals by bone, 103
Ovarian hernia in infant, strangulated, 183
Ovaries, physical and mental changes after removal of, 208
Ovariotomy, 581
Ovum, partial rotation of, in early pregnancy, 415
Oxygen inhalation, 461
in leukæmia and chlorosis, 491
Oxygenized water in the treatment of blennorrhagia, 269
Oxyuria vermicularis, cure for, 270
Ozæna, glycerine tampons in, 376

PANCREAS, amyloid degeneration of, 208
Paralysis, alcoholic, with central lesions, 55
arsenical, 378
early stages of general, 355
from carbonic oxide poisoning, 55
of the sphincter iridis, 132
pseudo-hypertrophic, 179
Paraplegia, tetanoid, 38
Parenchymatous injections in the spleen, 11
Paresis, analysis of some ocular symptoms of, 131
general muscular, 138
Papular erythema, powder for, 465
Papillomata of velum, 179
Parasiticide ointment, 665
Parkes, ovariotomy, 589
osteomyelitis of humerus, 619
Partial rotation of the ovum in early pregnancy, 415
tenotomy in neurasthenia with ocular insufficiencies, 132
Parvin, creolin in cystitis of the female, 598
Pasteur's institute, statistics from, 139, 307
Patella, treatment of fracture of, 211, 582
with Malgaigne's hooks, 214
Pathological Society of Philadelphia, 453
Peabody, therapeutics of typhoid fever, 656
Pea soup, as a substitute for beef tea, 407
Pelvic surgery by abdominal section, 52
tumors, extirpation of, by perineotomy, 190
Pelvis, contracted, version in, 548
Penis, hemorrhage of, from child, 607
Penrose, intestinal obstruction from appendicitis, followed by perforation of bowel, 578
Pepper, slight continued diarrhœa, 603
Pericarditis, a new symptom of, 97
Peripheral epilepsy, 705
neuritis due to pyelo-nephritis, 55
paralysis from carbonic acid poisoning, 55
Perineotomy, extirpation of pelvic tumors by, 190
Perineum, easy method of repairing, 445
Perineorrhaphy, 188
Perinephritis, case of, 605
Periostitis, thermo-cautery in mastoid, 296
case of, followed by osteo-myelitis, pyæmia and death, 149
Peritonitis, 52
chronic, with reference to the diagnosis of some of its varieties, 498
produced by diplococcus, 324
purulent, with perforation of appendix, 572
Perityphlitis, 128
treatment of, 721
Pernicious anæmia, leucocythæmia, and Hodgkin's disease, 365
Peroneal form of progressive muscular atrophy, 109
Perspiring feet, 12, 209
Pertussis, treatment of, with resorcin, 485
Peruvian balsam as a germicide, 184
in laryngeal phthisis, 488
Pessaries, use of, 378
Petroleum soap for itch, 10
Phalanges, wiring of, 11
Pharyngeal bursa, cyst of, 254
Phenacetine poisoning, 335
Phenic acid, antidote for, 196
Phenol in whooping-cough, 12

Philadelphia, mortality in, 419
Philanthropy and sanitation in the tenement house district, 243
Phlebitis, 465
following typhoid fever, cases of, 265
Phlegmasia alba dolens, treatment of, 612
Phosphates in the treatment of rickets, 295
Phosphorus, treatment of rachitis with, 467
Photographing with the microscope, 717
Phthisical night-sweat, treatment of, 406
Phthisis and tuberculosis, unity of, 7
creasote in, 325
functions of the stomach in, 436
laryngeal, treatment of, 376
menthol in, 549
pulmonary, remarks on treatment of, 234
ventriculi, 584
Physiology of the heart and valves, 553
of the intra-tympanic muscles, 105
Physiological investigation, decision against, 187
Physiologists, First International Congress of, 329
Pigment, formation of, in the negro, 393
Pilocarpine in gall-stones, 581
in night sweats, 638
in tobacco and alcoholic amblyopia, 463
in traumatic tetanus, 10
Pine belt of New Jersey, 152
Pint, British and American, 28
Pistol-shot wound of the abdomen, 28
Pitting, prevention of, after variola, 550
Pityriasis, lotion for, 156
treatment of, 437
versicolor, salve for, 98
Placenta prævia, caused by rotation of ovum, 415
treatment of, 268, 721
Plaster bandages, machine for preparing, 334
Plastic resection of the sacrum, 188
Platt, influence of climate and season upon nervous activity, 146
pine belt of New Jersey, 152
Pleurisy, comparative results in, 63
Pleurotomy, 724
Pneumonia, croupous, 554
mortality of, 100
in malarial and non-malarial districts, 366
treatment of, by application of ice, 238
Pneumonias consecutive to strangulated hernia, 27
Poisoning by tansy, 408
by carbonic oxide, paralysis from, 55
by cocaine, 71
by corned beef, 336
by fish, 411, 549
by phenacetin, 334
by potato, 463
by tyrotoxicon, 546
from external application of chromic acid, 492
Poisonous textile fabrics, 212
Polarity, use of, for locating bullet, 53
Poliomyelitis anterior acuta, 23
nuclear, ophthalmoplegia with, 25
Polluted water, typhoid epidemic from, 72
Polyclinic, new building for the Philadelphia, 420, 476
Therapeutical Society, 503
Pons, lesion of the, 496
Poorhouse at Wilmington, N. C., 618
Porro-Cæsarean section, 480
Possibility of establishing tolerance for the tubercle bacillus, 435
Posterior gonorrhœal urethritis, diagnosis of, 247
Post-nasal catarrh, wash for, 609
-partum hemorrhage, 219
iodoform gauze in, 665
irrigation with hot water, 44
Potato poisoning, 463
Pregnancy, case of tubal, terminating spontaneously per vaginam, 96
concealed, 15, 17
diagnostic sign of early, 183
Pregnancy, extra-uterine, 17, 189, 447
induction of premature labor in Bright's disease of, 75
parturition, facts and superstitions concerning, in China, 204
partial rotation of the ovum in, 415
relations of uterine retro deviation to, 413
tubal, hysterectomy, and an operation for, 556
Preparation of absorbable drainage-tubes from arteries of animals, 113
Prevention of hog cholera, 159
of pain after evisceration of the eye, 135
of pitting after variola, 550
of puerperal mastitis and abscess by friction, 231
of the spread of consumption, 56
Preventive medicine, some external sources of infections in their bearing on, 29
treatment of megrim, 44
Primary cancer of the gall-bladder and ducts, 362
Prognosis of albuminuria, 293
of coryza in young children, 210
Progress of medicine during the last fifty years, 354
Prolapse of the womb, with especial reference to hypertrophy of cervix, 121
Properitoneal hernia, 51
Prophylactic hair tonic, 377
influence of vaccination during intra-uterine life, 419
Prophylaxis of puerperal eclampsia, 307
of tuberculosis, 79, 222, 280
Prostate, enlarged, retention of urine from, 583
Prostatitis, chronic, treatment of, 488
Pruritus, treatment of, 209, 463
Pseudo-hypertrophy, 109
-hypertrophic paralysis, 179
membranous rhinitis, 22
orchitis, 486
Psoas abscess, double, following Pott's disease, 303
Psoriasis and pityriasis, 437
hydracetin in, 156
prescription for, 464
various methods of treating, 464
Psychical research, sphygmograph in, 554
Psychological factor in selecting a climate for invalids, 173
Ptomaine of rabies, 323
Puerperal eclampsia, antiseptic treatment of, 724
bleeding in, 331
diagnosis and prognosis of, 300
etiology of, 274
relation of bacteria to, 299
treatment of, 723
fever, alcohol in, 461
mastitis and abscess, treatment by methodical frictions, 231
state and scarlatina, 461
Pulmonary cavity, resection of ribs for drainage of, 54
consumption, food in the treatment of, 80
disease, pathology of hemoptysis, 178
phthisis, digestion in, 157
tuberculosis, hot-air inhalations in, 364
Pulse, slow, remarkable case of, 359
Purification of polluted streams, 167
Purulent peritonitis, with perforation of the appendix vermiformis, 572
Purpura hæmorrhagica, nitrate of silver in, 488
Pyelitis, case of, 99
Pylorectomy, 99
Pyloric stenosis, treatment of, 663
Pyopneumothorax and tuberculosis, 349
Pyosalpingitis, gonorrhœal, 161

QUIET gout, 437
Quinine, administration of, where there is defective hearing, 473
peculiar case of idiosyncrasy to, 375

RABIES, 504
Italian institute for, 195
ptomaine of, 323
Rachford, experimental studies on the etiology of typhoid fever, 453
Rachitis, treatment of, with phosphorus, 467
Radical cure of hay-fever, 417, 501, 559
of hernia, 51
operation for varicocele, 267
Railway Surgeons, Society of, 354
Randall, simple tests of the ocular muscles, 263
photographing with the microscope, 717
Rapid cure of chorea by antipyrin, 10
Rattlesnake bite, recovery, 291
Reasons of failure in treating chronic rhinitis, 471
Rectum, catarrh of, 721
electrolysis in treatment of stricture of, 53
treatment of cancer of, 325
Reduction of hernia during coughing, 462
Rejected contributions, 196
Relapses, pathology of, 127
Relative growth of organs of the body, 270
Rembrandt's Lesson in Anatomy, 418
Renal atrophy and hydronephrosis from disturbance of micturition, 141
Repression of menstruation, 414
Resection of the sacrum, 188
of ribs for drainage, 54
Resorcin, treatment of pertussis with, 485
Responsibility in contagious or infectious diseases, 271
of the drunkard, 392
Resuscitation from drowning, 243
in apnœa, 725
Retro-pharyngeal abscess, 138
Retro-fixation, uterine, 190
Reviews—
Ashhurst, Surgery, 614
Berry, Diseases of the Eye, 469
Billington, Diphtheria, 331
Bourneville, Hypodermic Medication, 586
Bowen, Handbook of Materia Medica, Pharmacy, and Therapeutics, 495
Bricon, Hypodermic Medication, 586
Davenport, Diseases of Women, 554
Farquharson, Guide to Therapeutics and Materia Medica, 442
Hirst, System of Obstetrics, 188
Holland, The Urine, the Common Poisons, and the Milk, 331
Holmes, Treatise on Surgery, 330
Keating, Cyclopædia of the Diseases of Children, Medical and Surgical, 74
King, Manual of Obstetrics, 642
Loomis, Bright's Disease, 130
Marcy, Radical Cure of Hernia, 496
Mills, Physiology, General Biology and Full Treatment of Reproduction, 585
O'Dwyer, Intubation in Croup and other Forms of Stenosis of Larynx, 331
Parvin, Lectures on Obstetric Nursing, 381
Playfair, Midwifery, 441
Prudden, The Story of Bacteria and their Relations to Health and Disease, 412
Saundby, Lecture on Bright's Disease, 330
Seiler, Throat, Nose, and Naso-pharynx, 413
Semple, Student's Aid Series, 553
Taylor, Clinical Atlas of Venereal and Skin Diseases, 673
Transactions of Illinois State Medical Society, 381
Wilks, on Pathological Anatomy, 273
Wood, Syphilis of the Nervous System, 381
Wood's Medical and Surgical Monographs, 442, 485, 486, 495, 496
Woodbury, Disordered Digestion and Dyspepsia, 412
Year-book of Treatment, 642
Rheumatism, antifebrin in, 641
Rhinal diseases, reflex symptoms of, 472

Rhinitis, pseudo-membranous, 22
cause of failure in treating, 471
Rhinology, therapeutics of, 472
Rhino-pharyngeal inflammations, constitutional treatment in, 473
Rhode Island Medical Society, 46
Rib cutter, new, 54
Rickets, massage in, 406
phosphorus in the treatment of, 295
Risley, rotary prism, 701
Roberts, W. O., direct herniotomy, 687
Robinson, causation and treatment of asthma, 225
Rotary prism, new, 701
Rotation in right occipito-posterior positions, 190
Rubber bandages, fastening of, 381
Rupture of the quadriceps tendon, 191
of uterus, cases of, 188
Russell, bacteria in ice, 169

SACRAL operation in gynecology, 349
Sacrum, resection of, 188
Salicylate of mercury in syphilis, 610
Salicylic acid in the treatment of corns, 581
preparations in pruritus, 42
Saline and chalybeate tonic, 12
injections, subcutaneous, 486, 664
Saliva, antiseptic properties of, 324
Salol, 549
influence of, on the cholera bacilli, 14
Salpingostomy, 239
Salt, effects of, on bacteria, 639
solution after hemorrhage, 248, 664
Sanitary administration of dairy farms, 101
condition of Munich and Memphis, 329
Sarcoma of the optic nerve, 130
of kidneys, 695
Scabies, prescription for, 665, 693
Scarlatina, 23
and the puerperal state, 461
chloral in, 654
in London, 420
Scholarship at the College of Physicians and Surgeons, 159
Sciatica, antipyrin in, 210
chronic, pathology and treatment of, 54
Sclerosis of the brain, 533
Scraping of chancres, 296
Scrofulosis, iodoform in, 581
Scrofulous glands, 468
Seborrhœic eczema, 487
Secretions, cultures from vaginal, 324
Sectarianism in medicine, Jackson, 425
Seiss, hypertrophy of lingual tonsil, 693
Senile pruritus, salicylates in, 42
Senn, surgical treatment of volvulus, 590
Bacteriology, French translation of, 14
Sensory aphasia, pathology of, 83
Septic neuritis from pyelo-nephritis, 55
Septum, atrophy, hypertrophy, and deviations of, 473
Sewage, "amminol" for disinfection of, 338
new method of precipitating, 307
Sexual asthma, 350
Shock, surgical, with reference to brain and spinal operations, 317
Sialagogue mixture, 208
Skin, circumscribed œdema of, 247
remedies, new, 126
Skull, fracture of, 554
Smallpox in Kings County, 475
Smith, J. L., treatment of tuberculosis, 651
Smith, T., microörganism of Texas fever, 689
Snakes, mortality from, in Bombay, 15
Soap, camphorated, 239
Society, American Microscopists, 252
American Pædiatric, 213
Anglo-American, 448
D. Hayes Agnew, 495
Continental Anglo-American, 503
Medical and Chirurgical, 419
of Virginia, 74
Mississippi Valley Medical, 390
Society proceedings—
American Gynecological Society, 382, 413
Medical Association, 15, 47, 74, 110, 135
Neurological Association, 24, 81, 108
Ophthalmological Society, 105, 130
Otological Society, 103
Rhinological Association, 471
Association of American Physicians, 354
Cincinnati Academy of Medicine, 470
Congress, German Dermatological, 133, 246
German Gynecology, 160, 188, 218
of Surgery, 27
Gynecological, of Chicago, 274, 299, 331, 555
New York Academy of Medicine, 138, 192, 216, 303, 498
Academy of Surgery, 1, 191
County Medical Association, 161
Neurological Society, 55, 496
Obstetrical Society of Philadelphia, 445
Pathological, of Philadelphia, 453
Philadelphia Academy of Surgery, 137, 191, 214
County Medical Society, 442
Polyclinic Therapeutical, 503
Third Congress of the German Gynecological, 218
Tri-State Medical Association of Tennessee, Georgia, and Alabama, 533
Somnal, 721
South Carolina Medical College, 213
Southern California as a winter resort, 404
Soziodolates in diseases of the throat and nose, 126
Sparteine, 697
Spastic contractions, cocaine injections in, 43
Sphincter iridis, paralysis of, 132
Sphygmograph in psychical research, 554
Spinal cord, malaria as a cause of disease of, 24
irritation, 677
operations and surgical shock, 317
Spine, osteo-sarcoma of, 538
Spleen, injections into, 11
Splenectomy, effects of, 10
Sponges, disinfected, 161
methods of rendering aseptic, 485
Spontaneous neuritis of brachial plexus, 25
Springs, disinfection of, 155
Stab-wounds of abdomen, 661
Staining of gonococci, 666
Stamm, suprapubic cystotomy in enlarged prostate and false passage, 236
Statistics, medical and vital, 561, 678
Sterilized bone, absorption of, 54
milk delivered to patients, 593
Stewart, cocillana in diseases of lungs, 197
olive or cotton-seed oil in gall-stone colic, 573
Stimson, modifications in the technique of abdominal surgery, 93
Stomach, diagnosis and treatment of disorders of, 309, 459
functions of, in phthisis, 436
syphilitic dilatation of, 547
treatment of dilatation of, 296
Stomachic mixture, 156
Stomatitis, formula for, 99, 640
Strabismus, determination of the deviations in, 136
non-surgical treatment of, 135
Strangulated hernia, followed by pneumonia, 27
inguinal hernia, 662
ovarian hernia in an infant, 183
Stricture of the rectum, electrolysis in, 53
urethral, treatment of, 494
Strophanthus, use of, in children, 488
Strychnine in alcoholism, 270
Stuver, white lead in the treatment of erysipelas, 368
Styrone, an antiseptic, 408
Subcutaneous administration of mercury, 466
herniotomy, 638
saline injections, 486
Subjective sensation of cold as a symptom, 361
Substitutes for opium, 358
Sugar, detection of, in the urine, 490
Suggestibility and hypnotism, 554
Suggestive therapeutics, 466
Sulphonal, death from, 164
in mental diseases, 210
in night sweats, 462
observations on, 8
Suppositories for endometritis, 294
Suppurative otitis, 103
Suprapubic cystotomy 236
lithotomy in children, 98
Surgery, abdominal, modifications in, 93
pathology of, 16
of the abdomen, 16
of the central nervous system, 57
orthopædic, advances in, 185
Surgical shock with reference to brain and spinal operations, 317
treatment in diseases of the nose, 473
of volvulus, 590
Suspension, death from, 44, 280
Suture in Cæsarean section, 190
of the neck of the humerus, 137
Swine, report on epidemic diseases of, 166
Sycosis vulgaris, 267
Symptom of pericarditis, a new, 97
Syphilis, dilatation of the stomach in, 547
of the nervous system, 381
salicylate of mercury in, 610
treatment of, 548, 625, 697
transmission of, by instruments, 613

TAMPONS, glycerine, in ozæna, 376
Tannin injections in typhoid fever, 267
Tansy, poisoning by, 408
Taylor, treatment of syphilis, 625
Telephone, dangers in the use of the, 239, 588
Tendon, rupture of the quadriceps, 191
Tenement houses, crowding of, 243
Tenotomies in neurasthenia with ocular insufficiencies, 132
Testicular juice, 224, 280
Tetanoid paraplegia, 38
Tetanus, pilocarpine in, 10
Tetany, pathology of, 356
in infancy and early childhood, 244
Texas fever, microörganism of, 689
Thalline and thallium, 376
Therapeutic actions of hydrastis Canadensis, 126
measures in rhinology, 472
properties of antifebrin, 182
Therapy of ocean climate, 114
Thermo-cautery in mastoid periostitis, 296
Thiol as a substitute for ichthyol, 11
Thoracentesis, 440
Throat and nose, soziodolates in diseases of, 126
imaginary bodies in, 554
lozenges for, 546
reflex inflammation of, 474
Thrombosis of cerebral sinuses and veins, 357
Thyroid and cricoid cartilages, fracture of, 71
gland, intra-thoracic growths developing from, 279
Tobacco amblyopia, 135
Toenail, treatment of ingrowing, 466
Tompkins, abscess of the liver, operation, death, 397
Tongue, fissures of, 266
operation and prognosis of extirpation of, 350
Tongue-tie, 548
Tonsil, fibroid tumor of, 179
lingual, 693

Tonsillitis, 379
chronic, 339
Toothache, prescriptions for, 323, 665
Tooth powder, formulæ for, 325
rash, treatment of, 183
Torticollis treated with gelsemium, 543
Townsend and Coolidge, mortality of pneumonia, 85
Trachelorrhaphy, 415
Trachoma, use of the curette in, 107
Transmission of syphilis by contaminated instruments, 613
Transplantation, corneal, 130, 408
Trephining and excision of the motor centres, 703
for epilepsy, 611
Trifacial paralysis, 677
Tri-State Medical Association, 391
Trudeau, hot-air inhalations in phthisis, 337
Tubal pregnancy terminating per vaginam, 96
Tubercle bacillus, tolerance for, 435
Tuberculosis and the unity of phthisis, Huber, 7
dissemination of, 462
form of the bacilli in, 246
homerania in, 269
hot-air inhalations in, 364
in children, 492
inheritance of, 640
inoculation of, through vaccination, 99
miliary, cases of, 67
of prostate, 697
of testicle, 666
prophylaxis of, 79, 222, 280
second Congress of, 329
treatment of, 651
Tuberculous infection, channel of, 99
pyopneumothorax, 349
ulcerations, camphorated naphthol in, 270
Tumor, malignant, nephrectomy for, 240
microbes of, 407, 699
of orbit and neighboring cavities, 131
of the uterus, fibro-cystic, 447
of tonsil and nasal septum, 176
pelvic, extirpation of, 190
uterine, treatment of, by electricity, 13
Tumors of breast, White, 647
Turpentine as an excitant of osseous tissue, 27
eruption, a new, 437
Typhoid epidemic in Berlin, 238
at Basle, 308
from polluted water, 72
fever, 554
at Yale College, 476
etiology of, 453, 468, 470
treatment of, 656, 696
phlebitis following, 265
tannin, injections in, 267
Typhlitis and perityphlitis, massage in, 70
treatment of, 698
Typhus bacilli in water, 195
Tympanic attic, inflammation of, etc., 103
Tyrotoxicon poisoning, 546
Tyson, hæmaturia, 58

ULCER, gastric, treatment of, 486
Ulcerations, camphorated naphthol in tuberculous, 270
Umbilical cord, dressing for, 296
hemorrhages from, 268
hernia, congenital, 137
simple method of treating, 448
Urinary calculi, operations for, 48
Unity of phthisis and tuberculosis, 7
Unrecognized dislocation, 137
Urethral stricture, treatment of, 494
Urethritis, diagnosis of posterior gonorrhœal, 247
lanolin in the treatment of, 184
treatment of chronic, 124
Urine, normal, albumin in, 292
lead in, 363
treatment of retention of, 583
Urticaria, treated with antipyrin, 240
Use and abuse of antiseptics in obstetrics, 382
strophanthus in children, 488
Uterine cough, treatment of, 181
cancer, galvano-cautery in, 383
hemorrhage, cornutin in, 486
hydrastis Canadensis in, 549
retrofixation, 190
treatment, abuse of, 621
tumors, electricity in, 13
Uterus, extirpation of, by Zuckerkandl's method, 190
fibro-cystic tumor of, 447
inversion of, acute, 558
physical and mental changes after removal of, 188
results of the extirpation of, 219
ventro-fixation of, 220, 406

VACCINATION, inoculation of tuberculosis through, 99
influence of, during intrauterine life, 419
Vaginal secretions, cultures from, 324
hysterectomy, cases of, 556
Vaginitis in children, 3
Varicocele, 267
Variolic orchitis, 247
Variola, antiseptic treatment of, 269
prevention of pitting after, 550
treatment of confluent, 210
Vascular growth in the vitreous, 130
Veins, thrombosis of cerebral sinuses and, 357
varicose, treatment of, 463
Velum, multiple papillomata of, 179
Ventro-fixation of uterus, 220, 406
Vermifuge, 437
novel, 437
Vermont State Insane Asylum, 195
University commencement, 74
Version in contracted pelvis, 548
Vesical calculus, operations for, 407
Vesico-vaginal fistula, position for operating, 322
Veterinary Congress, First International, 354
Vienna water supply, 73
Vital statistics, 501, 678, 706
Vitality of cholera bacteria in milk, 156
Vitreous, extraction of steel from, 130
Volvulus, surgical treatment of, 590
Vomiting in pregnancy, treatment of, 489
Vulvo-vaginitis, 139
in children, 3

WALKER, treatment of hemoptysis, 204
Warts, treatment of, 208, 350
Wasp sting, fatal result of, 408
Water, examination of, 352
oxygenized, 269
reduction of temperature by a spray of, 582
typhoid epidemic from, 72
Way, intestinal obstruction with strangulated hernia, 370
Weed, Dr. C. L., death of, 587
Weir, gastro-enterostomy for pyloric stenosis, 663
Welch, some external sources of infection, etc., 29
White, latest Listerian dressing of wounds, 608
tumors of breast, 647
White lead in the treatment of erysipelas, 368
Whitehead, treatment of compound fracture, 403
Whooping-cough, treatment of, 639, 664, 666
bacilli of, 698
Wilmington Poorhouse, 618
Wilson, Dr. Elwood, death of, 74
Wilson, J. C., remarks on treatment of pulmonary phthisis, 234
treatment of scarlatina with chloral, 654
Wilson R., rupture of the biceps of each arm, 372
Windward Islands, winter vacation to, 164, 193, 220, 250, 278
Winslow, surgery of the central nervous system, 57
Wiring the phalanges, 11
Wolf in sheep's clothing, 380
Wolff, diagnosis and treatment of diseases of stomach, 309
Woman's Medical College of Philadelphia, 102
of Cincinnati, 427
Womb, prolapse of, 121
Wound, dressing to lie next the, 50
gunshot, 541
pistol-shot, of the abdomen, 28
Wright, cyst of the pharyngeal bursa, 254
Wrist-joint, excision of, 660

YELLOW fever at Key West, 587
Young, tetanoid paraplegia, with cases, 38

ZUCKERKANDL'S operation, 190

BINDING LIST JUL 1 1938

R
11
M43
v.55

The Medical news

Biological & Medical Serials

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY